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NONTUBERCULOUS SPINAL EPIDURAL INFECTIONS*

A. PRICE HEUSNER, M.D.†

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NONTUBERCULOUS spinal epidural infections are infrequent disorders that merit periodic reconsideration by the profession at large because of the heavy responsibility accruing to the practitioner who first visits a patient thus afflicted. Final diagnosis and definitive treatment of these infections are now regarded as functions of specialists, but the decisive factor in the outcome of most cases is the celerity with which the first attending physician suspects the probable nature of the ailment and summons expert aid. Thus, early diagnosis leading to prompt surgical intervention is regularly rewarded by total recovery. On the other hand, even brief delay of operation can vitiate all subsequent efforts to avert permanent paraplegia or quadriplegia with an attending loss of control over bladder and bowel, an insensible skin predisposed to bedsores and a host of secondary complications inherent in this type of disability. Such crippling effects are traceable to the fact that undrained spinal epidural sepsis can produce irreversible neurologic damage with tragic suddenness, and numerous attempts[1–4] have been made to ensure universal recognition of this dreadful potentiality. Nevertheless, enduring paralyses continue to follow in the wake of these lesions with unnecessary frequency.

It is clearly a matter of general interest to inquire into the factors that seemingly perpetuate these costly delays. Such is the main purpose of this paper, and its conclusions may be anticipated to the extent of declaring that the situation will be rectified only when the entire medical profession becomes sufficiently familiar with the clinical aspects of epidural inflammation to suspect its presence at a preparalytic phase of the disorder. During this remediable stage, the illness is almost routinely mistaken for some more everyday ailment, and in far too many cases the patient reaches the surgeon only after paralysis is complete and all hope for restoration of function has vanished.

The present study will also be of interest to specialists in the field. The literature contains reports on more than 200 cases of spinal epidural sepsis and several excellent review articles,[3–5] but clinical papers have, with few exceptions[2,3,6] dealt with one or at most a few cases. No analysis of the clinical features of a relatively large group of cases treated in one clinic is available. Nor has any article attempted either to describe the role or to estimate the value of modern antibacterial agents in a large series of such cases. Information on these matters together with a note on the mechanism of the paralyses is here presented.

MATERIAL AND CLASSIFICATION

The present report is based upon an analysis of the 20 consecutive cases of nontuberculous spinal epidural infection receiving definitive treatment in this clinic since its organization in 1930.‡

It is customary to divide the lesions under consideration into acute spinal epidural abscesses, including metastatic and osteomyelitic, and chronic spinal epidural granulomas. More elaborate nosologies have been proposed[5] wherein etiologic, pathologic, anatomic and temporal designations are compounded into long, hyphenated names that are both more descriptive and of more prognostic import than those of the above classification. Unfortunately, these are too cumbersome for ordinary usage. The present material is therefore presented under a modification of the customary classification: acute spinal epidural infections, including metastatic and osteomyelitic; and chronic spinal epidural infections, including metastatic and osteomyelitic.

As the names suggest, the first variety runs a rapid clinical course while the second develops insidiously. It is important to retain this distinction in clinical tempo if only to stress that surgical urgency increases *pari passu* with the rate of clinical

*From the Department of Neurosurgery, Boston City Hospital.

†Instructor in neurology, Harvard Medical School; associate surgeon for neurosurgery, Boston City Hospital.

‡During this eighteen-year period, paraplegic patients with burned-out epidural sepsis have come to this clinic for rehabilitation, but their definitive treatment had been carried out elsewhere and they are not included in this study. Also omitted from consideration here are patients who suffered from tuberculous, syphilitic and echinococcal epidural infections and a few cases of spinal *subdural* sepsis, all concurrently treated.

evolution. If this concept is borne in mind, cases unfolding at a subacute rate will automatically be deemed urgent, and a third major category may thus be safely avoided. As is shown below, prognostic implications probably justify the continued recognition of metastatic and osteomyelitic subdivisions within each major category. In the former group, no vertebral osteomyelitis is demonstrable, whereas in the latter, a spinal caries appears to be the reservoir of sepsis from which the epidural lesion arises. It is preferable, however, to speak simply of acute and chronic "infections" rather than to imply a fixed correlation between the age of a lesion and its gross pathological appearance. This is because the chronicity of an infection does not enable one regularly to predict whether abscess or granuloma will be found.

Etiology

It is generally agreed that a spinal epidural infection is traceable to a primary focus of inflammation located elsewhere in the body either near to or remote from the epidural compartment. In the former case, invasion of this space is thought to occur either by *direct extension* from such a focus as a pre-existing vertebral (or costal) osteomyelitis, or by *lymphatic spread* from a paraspinous lesion such as a retropharyngeal abscess or a mediastinal infection. In osteomyelitic cases, the caries, in its turn, may sometimes be traced to a remote reservoir of sepsis such as a chronic acne. In cases in which

Table 1. *Aetiologic, Pathologic and Clinical Data on Boston City Hospital Series.*

Syndrome	Case No.	Age	Sex	Site of Lesion	Axial Extent in Segments	Primary Focus	Other Foci and Trauma	Blood Culture*	Chill
		yr.							
Acute metastatic	1	16	F	D10–L1	4	Furuncle	0	Negative	Present
	2	64	M	D2	1	Cystotomy wound	0	Not done	Absent
	3	19	M	D9–L1	5	Acne	0	Negative	Absent
	4	13	M	L1–L5	5	None found	Fall on buttocks	Positive	Absent
	5	14	F	D2–D5	4	Infected corn	0	Negative	Absent
	6	57	M	D3–D5	3	Empyema sinus	0	Not done	Absent
	7	64	M	L4	1	None found	Injury to back from lifting	Negative	Absent
	8	14	F	D2–D6	5	None found	Injury to back while skating	Not done	Absent
	9	14	F	D10–L5	7	Pyelitis	0	Positive	Present
	10	29	F	D10–L4	6	Acne	0	Not done	Present
	11	16	M	D6–D10	5	Cellulitis of forearm	Injury to back (football)	Positive	Present
	12	37	M	D3–D7	5	None found	0	Negative	Present
Acute osteomyelitic	13	51	M	D5–D6	2	Caries, D9 centrum	0	Negative	Absent
	14	47	F	D8–D9	2	Caries, D8 centrum	Septic nephrectomy	Positive	Absent
	15	36	M	D8–D10	3	Caries, D9 laminae	Chronic acne	Positive	Present
	16	51	F	C5–C6	2	Caries, C5 and C6 centra	0	Not done	Absent
	17	57	M	C5–D2	5	Caries, C5 and C6 centra	0	Negative	Absent
	18	61	M	D7–D9	3	Caries, D9 centrum	Cellulitis of toe stump	Positive	Present
Chronic metastatic	19	28	F	D9–D10	2	None found	(?) Grippe	Negative	Absent
Chronic osteomyelitic	20	51	M	C5–C6	2	Caries, C5 and C6 centra	0	Not done	Absent

*In all positive cultures, *Staphylococcus aureus* was the organism involved.

Table 1 (*Continued*).

Case No.	Temperature	Spinal Ache	Root Pain	Headache	Stiff Neck	Blood		Cerebrospinal Fluid	
						White-cell count	Block	White cells	Protein
	°F.					×10³		per cu. mm.	mg./100 cc.
1	102.0	Present	Present	Absent	Present	20.0	Present	200	770
2	102.0	Present	Absent	Absent	Absent	9.4	Present	Not done	414
3	101.0	Present	Present	Absent	Absent	14.5	Present	64	1920
4	103.0	Present	Present	Absent	Present	13.0	(Pus)	—	—
5	102.4	Present	Present	Absent	Present	19.0	Present	20	258
6	Normal	Present	Present	Absent	Absent	7.2	Present	2	616
7	101.0	Present	Absent	Absent	Absent	16.0	(Pus)	—	—
8	102.0	Present	Present	Absent	Absent	19.0	Present	41	166
9	103.0	Present	Present	Present	Present	15.5	(Pus)	—	—
10	103.0	Present	Present	Present	Present	16.0	Present	11	Clot
11	103.0	Present	Absent	Present	Present	24.0	Present	720	2000
12	101.0	Present	Absent	Absent	Present	13.6	Present	2	167
13	100.0	Present	Absent	Absent	Absent	15.0	Present	7	558
14	103.0	Present	Present	Absent	Absent	11.4	Present	21	570
15	103.0	Present	Absent	Absent	Absent	16.4	Present	Not done	Not done
16	103.0	Present	Present	Present	Present	11.3	Present	114	286
17	99.4	Present	Present	Absent	Present	17.0	Present	2	1000
18	99.4	Present	Present	Absent	Absent	10.7	Present	2	111
19	Normal	Present	Present	Absent	Absent	6.0	Present	35	2000
20	Normal	Present	Present	Absent	Present	10.5	Present	45	800

a distant focus is the direct source of the epidural lesion, bacteria are believed to reach the normal epidural fat (a *locus minores resistentiae*) by *hematogenous metastasis* from a furuncle, cellulitis, pyelitis or the like. *Direct inoculation* of the epidural tissues as a result of faulty asepsis during the performance of spinal puncture, or by penetrating wounds of the spine, is said to be another mechanism capable of exciting epidural suppuration, but no example has been encountered in this clinic.

It must be admitted that in a few of the presumedly metastatic cases, exhaustive searches fail the appraisal of any puzzling spinal ache or paretic ailment.

Table 1 summarizes the etiologic data on the present material.

The bacteriologic uniformity of these cases is striking. *Staphylococcus aureus* was recovered in pure culture from the epidural space of every patient except 1 (Case 20), in whom no cultures were made. It is generally agreed that this is the most frequent offending organism, but it is also reported[2, 3, 5] that the pneumococcus, streptococcus, *Bacillus pyocyaneus* (*Pseudomonas aeruginosa*), ty-

TABLE 1 (*Continued*).

Case No.	Diagnosis of First Attending Physician	Duration of Spine Ache before Operation *days*	Neurologic Status at Operation	Year of Treatment	Medical Adjunct	End Result
1	Spinal tumor	6	No weakness	1933	None	Complete recovery
2	Spinal infection	8	Paralysis (6 days)	1934	None	Death from pneumonia on 18th postoperative day
3	Acute rheumatoid arthritis	8	Paralysis (24 hr.)	1936	None	Complete recovery
4	Meningitis	5	Paralysis (24 hr.)	1937	None	Complete recovery
5	No diagnosis ventured	6	Paralysis (48 hr.)	1938	None	Survival (with spastic paralysis)
6	Hysteria or ethanolic polyneuritis	24	Paralysis (24 hr.)	1938	None	Complete recovery
7	Sacroiliac disease	5	Paralysis (24 hr.)	1938	None	Death from uremia and pneumonia on 9th postoperative day
8	Hysteria or cancer of uterus, with metastases	11	Paralysis (3 days)	1941	Sulfathiazole	Survival (with spastic paralysis)
9	Meningitis	8	Weakness only	1945	Sulfadiazine and penicillin	Complete recovery
10	Osteomyelitis of spine	21	Weakness only	1946	Sulfadiazine and penicillin	Complete recovery
11	Meningitis	12	Weakness only	1947	Sulfadiazine and penicillin	Complete recovery
12	Infectious polyneuritis	5	Weakness only	1948	Sulfadiazine and penicillin	Complete recovery
13	Osteomyelitis of spine	41	Paralysis (24 hr.)	1938	None	Death from pneumonia and lung abscess on 14th postoperative day
14	Osteomyelitis of spine	14	Paralysis (48 hr.)	1942	Sulfadiazine	Death from uremia and pneumonia on 13th postoperative day
15	No diagnosis ventured	5	Paralysis (48 hr.)	1944	Sulfadiazine and penicillin	Survival (with spastic paralysis)
16	Cervical neuritis	5	Paralysis (36 hr.)	1946	Sulfadiazine and penicillin	Survival; arms recovered; patient walks with crutches but without braces.
17	Spinal tumor	30	Severe weakness	1946	Sulfadiazine and penicillin	Complete recovery
18	Osteomyelitis of spine	38	Severe weakness	1947	Sulfadiazine and penicillin	Survival (only slight neurologic improvement)
19	Spinal tumor	60	Severe weakness	1947	Sulfadiazine and penicillin	Complete recovery
20	Spinal tumor	45	Severe weakness	1943	Sulfathiazole	Complete recovery

to uncover primary foci, and, as might be expected, no remote focus can be found for the vertebral caries in a high percentage of the osteomyelitic cases. Some authors[6] hold that all cases are but complications of a vertebral osteomyelitis that frequently escapes detection only because the search for it is seldom diligent. Others[7] dissent from this contention, and while there is more to be said on this score, I pause over it here merely to emphasize that antecedent infections outside the epidural compartment are of such frequent occurrence (75 per cent of cases in this series) as to be worthy of detailed inquiry in

phoid bacillus and other bacteria are occasionally found. (This discussion does not concern the frequent epidural extensions from tuberculous caries or those sometimes arising from actinomycotic and ecchinococcal disease.)

Table 1 shows that among the 18 acute cases, antecedent infections outside the epidural space were discovered in 14 (78 per cent). These foci were skin lesions in 7 (39 per cent), vertebral osteomyelitides in 6 (33 per cent) and pyelitis in 1 (6 per cent). The role of cutaneous infections is really greater than the 39 per cent indicates because

lesions of this type were the remote sources for the spinal caries in 2 of the acute osteomyelitic cases (Cases 15 and 18), thus raising the over-all incidence to 50 per cent among acute cases.

Among skin infections, acne and furuncles were most frequent. They appeared to be the primary foci for 3 of the acute metastatic (Cases 1, 3 and 10), and the remote focus for the spinal caries in 1 of the acute osteomyelitic cases (Case 15). Of the former group, the most recent pustules had appeared healed for several days prior to the onset of the spinal disease, and blood cultures were sterile in the 2 cases in which they were obtained. In the latter case, however, the acne was active, and *Staph. aureus* was recovered from the blood stream as well as from the epidural space.

Infected operative sites, cutaneous in 3 cases and deep in 1, appeared to be the primary foci for 2 acute metastatic lesions and the distant foci for the spinal caries in 2 acute osteomyelitic cases. The 3 cellulitides involved an amputated toe (Case 18), a suprapubic cystotomy wound (Case 2) and a virtually healed empyema sinus (Case 6); the deep operative sepsis was proved by autopsy to be in an apparently healed nephrectomy bed (Case 14). In all these patients the foci were active at the onset of spinal symptoms, and blood cultures were positive for the *Staph. aureus* in the only 2 cases (Cases 14 and 18) in which such studies were made.

The remaining cutaneous foci, an infected corn (Case 5) and a traumatic cellulitis of the forearm (Case 11), were found to antecede acute metastatic lesions. Both were suppurating at the onset of the spinal symptoms, and blood culture, omitted in Case 5, yielded the *Staph. aureus* in Case 11.

In 1 acute metastatic case (Case 9), a pyelitis was demonstrated by pyelography. *Staph. aureus* was found in the urine, the blood stream and the epidural space.

Of the chronic lesions, that in Case 20 was osteomyelitic but without discernible remote focus from which the caries might have arisen. In this case, neither blood nor wound cultures were obtained. The other chronic lesion (Case 19) was without spinal caries or detectable distant focus. The blood culture was sterile on the fifty-fifth day of the illness but might have been otherwise during a bout of "grippe" that antedated spinal symptoms by several days.

Among the 6 acute osteomyelitic cases there were 3 (Cases 13, 16 and 17) in which no remote foci for the caries were found. In none of these was a bacteremia demonstrated after the onset of neurologic symptoms, nor did trauma appear in the histories.

In 4 of 12 acute metastatic cases no primary foci could be discovered, but 3 patients (Cases 4, 7 and 8) had suffered recent, though mild, closed spinal injuries (Table 1) — of the entire series of 20 patients, only 1 other (Case 11) gave a history of trauma. Blood cultures, made in 3 of these cases, yielded *Staph. aureus* only in Case 4.

Sex appeared to play no role in susceptibility to these lesions. On the other hand, a difference of age incidence between the metastatic and the osteomyelitic categories is readily apparent. The average ages at onset were 29.6 and 50.6 years respectively. This difference is more arresting if it is noted that among the 7 osteomyelitic cases, no patient was younger than 36 years, whereas among the 13 metastatic cases there were 7 patients in the teens and 2 in the twenties. Any significance attaching to this difference is not clearly evident, but, taken in conjunction with pathologic, clinical and prognostic dissimilarities yet to be considered, it influences me to retain the distinction between metastatic and osteomyelitic syndromes.

It must be emphasized that the foregoing list does not exhaust the causative possibilities. Indeed, cumulative experience[2–6,8] indicates that almost any reservoir of sepsis caused by almost any pyogenic organism can occasion the development of an epidural lesion either directly by a hematogenous implant or sequentially by extension from an intermediately excited vertebral caries.

Pathology

Once established in the epidural space, infection spreads axially along the surface of the dural tube. Pus and granulomatous tissue in differing proportions usually accumulate in greatest amounts over the dorsum of this tube and exhibit little tendency to encircle it, although in osteomyelitic cases they occupy one or the other lateral epidural gutter at their site of origin from the bony lesion. Rarely, a lesion of bony origin is confined to the ventral compartment of the spinal canal. It is not entirely clear why the products of inflammation are thus deployed, but two discernible factors may be partially explanatory: the dorsal region is the normal disposition of the epidural fat, which, like adipose tissue elsewhere, offers little resistance to infection; and the ventral surface of the dural tube is moderately adherent to the underlying spinal ligaments, thereby affording a mechanical deterrent to the spread of infection that does not obtain dorsally where the dura lies free from the vertebral arches.

Among the acute cases, the epidural portion of the lesion was always predominantly granulomatous tissue. Usually, the red, friable tissue contained several tiny locules of pus that varied in amount from a mere droplet to 1, or at most, 2 cc. In 1 case (Case 6), however, no macroscopic pus was present; this lesion was thus a true "granuloma."

In 1 of the 2 chronic cases (Case 20), the lesion was a ventrally placed granuloma atop a cervical caries. In the other, a metastatic case (Case 19), the lesion consisted of two contiguous cocoons of granulomatous tissue, each containing about 5 cc. of pus. The walls of these cocoons were friable

and not fibrous, but this lesion was more nearly an "abscess" than that of any other case in the entire series.

Table 1 shows the axial extent of all lesions as determined by operative inspection. Among the 12 acute metastatic cases, this varied from 1 to 7 laminae with an average length of 4.3 bony segments. The 6 acute osteomyelitic lesions ranged within the narrower limits of 2 to 5 laminae, but, of more importance, they averaged only 2.8 segments. There is, then, less tendency for the osteomyelitic cases to spread axially within the epidural space. Their extensions beyond this compartment also differ from those of the metastatic cases both as to direction and as to type.

In acute osteomyelitic lesions, extensions beyond the epidural space were confined to ventrally placed sequestra (Case 14), frank pus issuing from an underlying paravertebral abscess (Case 18) and suppuration of a lamina (Case 15). The last case was the only 1 of the entire series of 20 patients in which laminal involvement was either suspected at the time of operation or subsequently proved by biopsy or x-ray study. The other acute osteomyelitic cases had disease of the vertebral bodies only. This was detected by preoperative roentgenographic examination in Cases 13, 14 and 18. The preoperative study in Case 17 was reported as uninterpretable, but caries was confirmed by biopsy and by postoperative x-ray examination. In Case 16 the epidural extension provoked neurologic trouble so suddenly (on the third day) as to preclude the preoperative roentgenographic demonstration of caries. Laminal biopsy was likewise nonconfirmatory, but postoperative x-ray study revealed caries of two cervical centra.

In acute metastatic cases, extensions beyond the epidural compartment were of quite a different nature. Pus often burrowed dorsally through the yellow ligaments to dissect along intermuscular planes (Cases 4, 5, 8, 9 and 10) or even to penetrate the lumbodorsal fascia and attain a subcutaneous position (Case 11). In no case was a ventral extension found, nor was caries demonstrated by biopsy or by roentgenographic studies in either the preoperative or the postoperative periods. Admittedly, as some[6] contend, this might have been overlooked, but an intensified search during recent years has failed to establish an osteomyelitic basis for an increased percentage of cases in this clinic. Moreover, there are clinical and prognostic differences yet to be added to those of age incidence and pathology that appear, collectively, to warrant adherence to the old practice of distinguishing between metastatic and osteomyelitic syndromes.

Of more interest, however, is the effect of epidural sepsis upon the underlying neural elements. So tough is the dura that its penetration by bacteria was not achieved in any of the present cases although some of them had woefully belated treatment. Penetration of the dura is said to occur,[2] but it is so rare that, upon the whole, the paralyzing effects of these lesions are to be accounted for by extradural phenomena.

In most discussions, the paralyses are ascribed either to mechanical compression or to some vaguely defined alteration in the blood supply of the neural tissue. Compression is the most obvious mechanism to invoke because the lesions are space-occupying. This explanation has not been universally accepted, however, because there are those who believe that the neurologic damage inflicted by an acute epidural infection is sometimes out of all proportion to the pressure it exerts. Also, it has been remarked that neural tissue appears less able to withstand the compressive action of inflammatory masses than that of noninflammatory lesions such as spinal tumor and cyst; the changes provoked by the former seem to be more abrupt in onset, more rapid in progression and less readily reversible. It is possible that any such apparent differences in tolerance can be explained away by variations in the amounts of pressure exerted by inflammatory and noninflammatory masses respectively, by dissimilarities in their respective rates of pressure increment or by inequalities in the axial extent (or area) of their application. Nonetheless, many surgeons have felt the need for a mechanism other than simple compression to explain the neurologic features of spinal epidural sepsis.

To meet this need, most authors postulate a blood-circulatory disturbance, but only Browder et al.[6] provide a specific illustration of such a mechanism. They present a specimen from a fatal case in which epidural arterial thromboses are seen in conjunction with myelomalacia. Hassin[7] made a detailed study of another fatal case and concluded that in his patient the fault lay in a stagnation of the spinal fluid although the pathologic picture was otherwise similar to that created by simple compression.

It is obvious that more and critical observations are needed to clarify this issue. It is my impression that the compressive action of these lesions, like that of noninflammatory masses, may harm neural tissue directly, or indirectly either by impairing its intrinsic circulation or through a pressure occlusion of epidural blood vessels, especially veins. A slowing of the blood flow in vessels surrounded by purulence would pave the way for thromboses and permanent neurologic damage. In this way, the action of inflammatory lesions might indeed be found to differ from that of noninflammatory masses.

Clinical Syndromes and Differential Diagnoses

Spinal epidural sepsis produces clinical syndromes that differ from one another not only in tempo but also in their respective epiphenomena. There is,

however, a basic clinical pattern common to all variants; it consists of the following march of events:

Phase I: Spinal ache
Phase II: Root pain
Phase III: Weaknesses of { voluntary muscles / sphincters / sensibilities }
Phase IV: Paralyses

In acute cases, the epiphenomena, in the form of signs and symptoms of unrestrained sepsis, may mask this basic pattern, but it is always present and requires only to be considered and inquired into. Also shared by all syndromes is the characteristic total (or but slightly subtotal) subarachnoidal block of the spinal fluid. If the spinal needle does not encounter epidural pus and thereby terminate the procedure at this depth, it finds yellowish spinal fluid showing a high protein content, usually a few white cells, but neither chemical nor bacteriologic evidence of leptomeningitis.

Details of the clinical data in this series of cases are given in Table 1. The broad features of the several syndromes may profitably be summarized around parenthetical comments upon frequent errors in diagnosis.

Acute Metastatic Syndrome

This illness (an obviously septic disorder) begins with an aching pain at the affected level of the spine. The pain soon becomes more severe and may bring the patient to his doctor within twenty-four hours. At this stage, fever and localized tenderness over the spine may be the only signs, but suspicion should be aroused if the history uncovers an extraspinal focus of chronic infection, recent injury to the spine or a chill (42 per cent of cases). Too often the case is dismissed as one of lumbago, arthritis, grippe or traumatic strain without provision for adequate follow-up care.

In most cases, however, the physician is first consulted on the second or third day of the illness when Phase II of the syndrome begins with root pains radiating from the now exquisitely tender spinal segment. These symptoms are sometimes construed as those of an acute "neuritis" even though the severity of the attending malaise, fever, tachycardia and leukocytosis (average white-cell count 15,600) is clearly inconsistent with this diagnosis. Although palsies are still wanting, the occasionally proffered diagnosis of acute arthritis is untenable because headache (25 per cent of cases), stiffness of the neck (58 per cent of cases) and reflex changes compatible with the anatomic level of the lesion — that is, depression of the deep tendon reflexes if it overlies the cauda equina, or heightening of them if over the spinal cord — are sufficiently evident in some combination to direct attention toward the central nervous system and to indicate the need for diagnostic spinal puncture. *By this procedure the correct diagnosis can and should be made before the end of Phase II of this syndrome.* It must be emphasized that this maneuver is safe only if undertaken by one who is both technically skillful and fully acquainted with the gross pathology of the suspected lesion. Otherwise, infection may inadvertently be carried from the epidural into the subdural or the subarachnoidal space, or both. In proper hands, however, the procedure incurs no risk that is not fully vindicated by the penalties of procrastination. In general, there is no more justification for the diagnosis of this disorder to await the appearance of paralyses than for the diagnosis of brain tumor to await coma.

If still untreated, the disease enters Phase III, in which motor weaknesses, gradually ascending numbness and impaired control over bladder or bowel supervene either concurrently or in any sequence. All the general signs of infection are intensified, the spinal ache becomes excruciating, and nuchal rigidity is apt to be extreme. At this stage, the usual mistakes are those of diagnosing leptomeningitis, poliomyelitis or infectious polyneuritis. The palsies should suffice to exclude meningitis; sensory defects and localized spinal tenderness should exclude poliomyelitis just as the latter finding is entirely out of keeping with polyneuritis. However, all doubt can be dispelled by spinal puncture because none of these diseases cause the block or the spinal-fluid formula characteristic of epidural sepsis.

If further neglected, the illness rapidly enters upon Phase IV, in which complete paralyses are conjoined with toxic prostration and even local *tumor, rubor et calor* if pus has attained a subcutaneous position. Such a state of affairs or even death itself may be reached within as few as six days. Occasionally, transition from Phase II to Phase III is delayed several days or even longer than a week, but passage from the latter to the paralytic stage is always rapid.

Acute Osteomyelitic Syndrome

As a general rule, this illness (an obviously septic disorder) differs clinically from the metastatic syndrome in only two respects: transition from Phase I to Phase II is delayed several days or even a few weeks — once Phase II is reached, however, the illness progresses with great rapidity; and vertebral caries is usually demonstrable by x-ray examination. Occasionally, the epidural extension from the caries arises very early (as in Case 16), bony changes cannot be shown by preoperative x-ray studies, and the illness appears to be metastatic until biopsy or postoperative roentgenographic examination proves it otherwise.

Differential diagnosis in the most acute cases is as outlined for the metastatic syndrome with one additional consideration. Acute vertebral osteomyelitis, uncomplicated by an epidural extension,

simulates Phase I of the syndrome under discussion. Development of an epidural extension is said to be quite infrequent,[9] but it must be given serious contemplation if root pains appear. A careful neurologic base-line is drawn at once, and the subsequent appearance of reflex alterations, paresthesias, weakness of the limbs or impaired functioning of the bladder calls for diagnostic spinal puncture, which clarifies the issue immediately.

Usually, however, the disease unfolds at a slower rate and roentgenographic changes in the spine make it necessary to consider tuberculosis. The epiphenomena of sepsis serve to exclude neoplasia; in most cases they are too intense even for the lesions of Hodgkin's disease. More trouble is afforded by tuberculosis because the staphylococcal lesions may also destroy intervertebral disks (as in Cases 13 and 14) and thus render roentgenographic appraisal of the bony lesion quite uncertain. Of most help in this connection are family history, pre-existing pulmonary symptoms, chest x-ray films and the usually more insidious development of the tuberculous lesions.

Chronic Syndromes

These illnesses (seemingly nonseptic disorders) differ from the foregoing syndromes not merely in that the march of events is strung out over weeks or months: the epiphenomena of sepsis are entirely lacking. The spinal ache is much less severe than that in acute lesions, and the entire picture of a chronic metastatic case is consistent with the development of a primary spinal tumor. In chronic osteomyelitic cases, however, the bony changes seen on x-ray study necessitate consideration of both tuberculosis and metastatic neoplasia. Final diagnosis may have to await biopsy, which is usually forthcoming before the advent of Phase IV because this disorder is seldom confused with nonsurgical ailments.

Initial Diagnosis

Table 1 lists the diagnoses entertained by the first attending physician in each case of this series. Specific mention should probably be made of the fact that in this clinic diagnostic spinal puncture in suspected cases of spinal epidural sepsis has never excited a leptomeningitis.

Treatment

In 1926, after a review of this entire subject, Dandy[4] summarized the incontrovertible evidence that chronic lesions are curable by surgery.

However, with the evidence then at hand, Dandy could only conjecture regarding the efficacy of operation for acute cases. He emphasized that the only 2 survivors among the 25 cases reported had been surgically drained, whereas the others had been paralyzed within forty-eight hours after the onset of neurologic changes, and had succumbed within six to thirty days. Neither of the survivors[10, 11] made full neurologic recovery, but Dandy prophesied that results would depend upon the stage of the illness in which operation was undertaken.

During the next several years, sporadic reports of the surgical cure of acute cases began to appear, so that by 1934, Slaughter, Fremont-Smith and Munro[1] were able to cite 6 survivors, including several neurologic recoveries to which they added 1 of their own (Case 1, of this series). This case was the first in which diagnosis and treatment were completed during a preparalytic phase of the illness. It typifies the possible but still rarely realized ideal management to which may now be added the adjunct of modern antibacterial agents.

Rare cases of recovery from presumed spinal epidural sepsis without operation were reported[12, 13] more than two decades ago, but the diagnoses in these cases are, in my opinion, open to considerable question.* The conception of nonoperative management is mentioned only to be condemned, notwithstanding a recent suggestion[16] that penicillin might sometimes obviate the need for surgery. I join Grant[3] in strenuous protest against any idea of surgical temporization with these lesions.

Once the diagnosis is made, laminectomy for drainage of the epidural space becomes a true surgical emergency. Every care, of course, is exercised to preserve the integrity of the dura. The lesion should be cultured, and a gram preparation of an epidural specimen should be made at once for tentative chemotherapeutic guidance. Administration of sulfadiazine and penicillin is begun while the patient is being prepared for operation, and a catheter is fixed in the wound for topical instillation of the penicillin during the immediate postoperative period. After the first forty-eight hours, the wound is dressed daily with scrupulous aseptic technic, care being taken to prevent pocketing or premature closure by gently laying penicillin-soaked sponges to the very floor of the incision. Daily wound cultures should be made for immediate detection of any secondary invaders that might require alteration of the topically applied antibacterial agent. Results of the original wound culture may occasionally necessitate a change of all antibacterial agents, but unless an obvious primary focus is known to be other than a *Staph. aureus* infection, it is safest to assume at the outset that this is the offending organism.

If the primary focus is active it should be cultured and treated by appropriate means but only after spinal drainage has been instituted.

Since the advent of penicillin and the sulfonamides, I have made delayed closure of these lami-

*Campbell[3] says that von Leyden and Nonne also have reported nonoperative recoveries, but he does not give the specific references. Von Leyden[14] does not mention such a case in his comprehensive monograph on diseases of the spinal cord, and I have been unable to locate Nonne's case. Nonne,[15] in reporting a fatal case of otogenic origin, does mention having witnessed a recovery, but this patient had had the benefit of surgical drainage. The case is undated, but it must be among the very first of surgical cures.

nectomy wounds to minimize morbidity. This is undertaken only after the patient's temperature, white-cell count and sedimentation rate are returned to normal, and the wound itself has satisfied certain criteria — namely, a full lining of clean granulation tissue, a low population of culturable bacteria and freedom from sinuses that yield pus when deep pressure is applied to the paraspinous musculature. The technical details for closure of these contaminated but noninfected wounds is beyond the scope of this paper. Suffice it to say that there have been no disruptions, and the total morbidity for metastatic cases has been reduced to an average of thirty-five hospital days in the last 3 cases. By contrast, closure of osteomyelitic wounds cannot be undertaken as early because of the more prolonged purulent drainage from the depths of the incision near the bony lesion.

When the wound is healed, patients with metastatic cases enjoying neurologic recovery are ready for discharge and immediate return to work. No support for the spine is necessary even though as many as 7 laminae have been removed, assuming of course that the articular facets were, as is proper, undisturbed by surgery. Convalescence of osteomyelitic cases is more prolonged, and it is advocated that a spinal support be worn until there is x-ray evidence to confirm a clinical impression that the spine is healed and stable.

The extensive program necessary for rehabilitation of patients who are left paraplegic lies outside the present discussion.

Prognosis and Results

Since the dawn of neurosurgery the prognosis for chronic cases has been good (Table 2). Although frequently operated on under the mistaken diagnosis of spinal tumor, the great majority of these patients have lived to enjoy neurologic recovery. This is understandable because the syndrome unfolds at a leisurely pace that almost assures the patient of operation before paralysis is complete or neurologic damage irreversible. The advent of modern antibacterial agents has made little change in the outlook because these patients never present the picture of unbridled sepsis.

The prognosis for acute cases has always been quite different, regarding both life and neurologic function. This is shown in Table 2, where the end-results of 158 acute cases are aligned both for comparison by decades, and for contrast with the fate of 44 patients suffering subacute or chronic lesions. Grant[3] attributes the improved results of the past decade to earlier treatment made possible by publications designed to acquaint the medical profession with the urgency of these cases. That early diagnosis is the key to neurologic recovery is borne out by the present series, in which *total recovery was realized in all patients who had no paralysis at the time of operation or who had a paresis of fewer than thirty-six hours' duration.* By contrast, no patient whose paralysis had been present longer than forty-eight hours made a neurologic recovery, and it was among cases of this type that all deaths occurred.

Table 2. *Comparative End Results in 202 Cases by Decade and by Type.*

Type of Case	Collected Before 1927*		Collected Before 1937†		Collected After 1937†		Boston City Hospital Series 1930–1948	
	No. of Cases	Per-centage	No. of Cases	Per-centage	No. of Cases	Per-centage	No. of Cases	Per-centage
Acute	25		71		44		18	
Deaths		92		60		31		22
Survivals		8		40		69		78
Patient paralyzed		8		?		25		28
Neurologic recovery		0		?		43		50
Subacute			2		6			
Deaths				100		33		
Survivals				0		67		
Patient paralyzed				0		0		
Neurologic recovery				0		67		
Chronic			15		19		2	
Deaths				20		10		0
Survivals				80		90		100
Patient paralyzed				?		10		0
Neurologic recovery				?		80		100

*Series of Dandy.[4]
†Series of Grant.[3]

The present material indicates, however, that the prognosis for life in acute cases has been materially improved since the arrival of penicillin and the sulfonamides (Table 3). Prior to 1939, there were 3 deaths among 8 cases. The patient in Case 7 succumbed on the ninth postoperative day in uremia with pneumonia and would probably be lost even today because of the renal failure. On the other hand, the 2 patients (Cases 2 and 13) who succumbed on the eighteenth and fourteenth postoperative days of pneumonia and pneumonia with lung abscess, respectively, might have fared better had potent antibacterial preparations been available. Since 1939, the single death among 10 patients was the patient in Case 14, who died in

uremia with pneumonia and a persistent bacteremia on the thirteenth postoperative day. Concurrently, however, penicillin and sulfadiazine were probably responsible for the survivals in Cases 15 and 18 — patients who suffered septic complications analogous to those proving fatal in Cases 2 and 13.

One further point concerning prognosis is worthy of note. I have maintained a distinction between metastatic and osteomyelitic cases on the grounds of dissimilarities of age incidence, pathogenesis, pathology and clinical features. Equally apparent are wide differences in their respective end results (Table 4).

Summary and Conclusions

Nontuberculous spinal epidural infections are infrequent disorders that usually occur in patients who harbor a focus of chronic infection somewhere outside the epidural space. Among such foci, acne, furunculosis, cellulitis, vertebral caries and old operative sites (sometimes apparently healed) are the most frequent. The symptomatology regularly unfolds in 4 steps:

Phase I: Spinal ache
Phase II: Root pain
Phase III: Weaknesses of { voluntary muscle / sphincters / sensibilities }
Phase IV: Paralyses

When this syndrome develops over the course of weeks or months and is unattended by the signs or symptoms of infection, the case is designated "chronic." When it is compressed into a few days or a week of illness that is further marked by chills, fever, malaise, headache, stiff neck and leukocytosis, it is designated "acute." In either event, properly executed spinal puncture during (or after) Phase II establishes the diagnosis by yielding either epidural pus or a subarachnoidal block with yellowish spinal fluid that exhibits an elevated protein content, usually a few white cells, but neither chemical nor bacteriologic evidence of leptomeningitis.

Treatment is primarily surgical and consists of immediate laminectomy for drainage of the epidural space. Penicillin and the sulfonamides are valuable adjuncts.

Table 3. *Effect of Penicillin and Sulfonamides upon Mortality in Acute Cases at the Boston City Hospital.*

Period	Total Cases	Deaths %	Survivals
Before 1939	8	37	63
After 1939	10	10	90

Total recovery depends upon early diagnosis and prompt surgical intervention. If operation is done before paralysis is established, the outlook is good. After forty-eight hours of paralysis, operation may save life but the neurologic damage is probably irreparable. Prognosis for life is further dependent upon the curability of the primary focus and any additional septic complications. If the former is an osteomyelitis, the outlook is more guarded than otherwise.

Table 4. *Comparative End Results of Acute Metastatic and Osteomyelitic Cases at the Boston City Hospital.*

Outcome	Metastatic Cases		Osteomyelitic Cases	
	No.	Percentage	No.	Percentage
	12		6	
Deaths		17		33
Survivals		83		67
Patient paralyzed		17		50
Neurologic recovery		67		17

Delay in diagnosing epidural sepsis is more often attributable to a failure to give it consideration than to any other cause. Fear of performing diagnostic spinal puncture in questionable cases is seldom a factor in delayed recognition of the disease, nor should it be. This procedure is of crucial importance to early diagnosis, and in proper hands its performance is infinitely less risky than its omission.

Bad results are usually traceable to the mistaking of these disorders for more everyday ailments until paralysis is complete and neurologic damage irreversible. Experience shows that the acute infections are almost routinely confused with meningitis, poliomyelitis, infectious polyneuritis, ethanolic polyneuritis, nonspecific monoradicular neuritis, arthritis, uncomplicated osteomyelitis of the spine or even hysteria (Cases 6 and 8).

The etiologic, pathologic, clinical, therapeutic and prognostic aspects of nontuberculous spinal epidural infections are discussed in the light of experience gathered in the definitive treatment of 20 consecutive cases on the Neurosurgical Service of the Boston City Hospital between the years 1930 and 1948. It is hoped that this discussion will enhance the general understanding of these disorders, facilitate their earlier recognition and thus further reduce the incidence of poor therapeutic results.

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PROGRESS IN GROUP PSYCHOTHERAPY

A Summary of the Literature

WILLIAM B. TERHUNE, M.D.,* AND JAMES R. DICKENSON, M.D.†

NEW CANAAN, CONNECTICUT

GROUP psychotherapy has aroused much interest in psychiatric and general medical circles. The literature is voluminous and varied, indicating many approaches and as many purposes, with coincident confusion. This report summarizes the recent literature. Medical group psychotherapy was initiated in Boston in 1905 by Dr. Joseph H. Pratt. Psychiatric group therapy has been practiced in the Boston Dispensary since 1930.

Military necessity and a shortage of psychiatric personnel resulted in the employment of this form of treatment by the armed forces in World War II. At the same time its use became expedient in civilian mental hospitals. Results indicate the need for a continuing exploration of group psychotherapy inasmuch as it is a valuable adjunct to individual psychotherapy.

In military group therapy, methods differed depending on the time and place, the facilities, the severity of illness and the therapist. There was, however, a general plan of treatment. Didactic subject matter used was analogous and usually was what the particular psychiatrist would have given patients in individual interviews. Emphasis was laid upon the normalcy of fear, aggression, projection and hostility to authority. Catharsis was employed for the relief of emotional tension and identification with others of similar experiences.

Participation in the group varied from compulsory disciplined attendance to "leaderless groups," in which patients selected their leader from their members and planned their program. The psychiatrist served as teacher-physician until the group attained sufficient knowledge of their problems and mental mechanisms to act more independently and until they had gained sufficient esprit de corps to do so. Activities were limited, but interesting and useful projects helped group solidarity and hastened recovery. In some cases therapists distinguished between treating individuals *in a group* and *true group psychotherapy*, in which treatment is largely through the interaction of members of the group upon each other. The average period of treatment was from six to eight weeks.

Psychiatrists employing group psychotherapy treated hundreds of thousands of men, usually with only one or two individual interviews. There was little follow-up study, and return to duty terminated treatment. Many reported "cures" were not permanent, and although symptoms were temporarily alleviated, the underlying personality structure remained unchanged. The limited number of psychiatrists made adequate treatment impossible.

Group psychotherapy is being extensively used by the Veterans Administration in both their hospitals and outpatient clinics; it is being employed in some state and a few private mental hospitals. The general opinion to date is that it is not nearly so effective as individual therapy, but that it is a useful adjunct to the latter. It enables a few doctors to give a large number of patients attention that they would not otherwise receive. It helps people; it certainly does not cure them. Group therapy, or therapy carried out in groups, seems to get patients just so far, but fails to take them across the line to a final and permanent recovery.

A review of current literature indicates the following tentative conclusions:

Group psychotherapy can extend aid to a larger number of patients than individual psychotherapy alone.

Over and above the questions of expediency, the shorter period of treatment and lessened expense, group psychotherapy offers in some cases fundamental values not obtainable through individual treatment alone.

*Associate clinical professor of psychiatry, Yale University School of Medicine; medical director, Silver Hill Foundation for the Treatment of the Psychoneuroses.

†Associate physician, Silver Hill Foundation for the Treatment of the Psychoneuroses.

This method is particularly applicable to psychoneurotics and to patients who, as children, felt rejected by the family group and who have not subsequently adapted themselves to other social groups.

Individual psychotherapy does not always solve the difficulty of the neurotic. The therapeutic group offers an opportunity to practice adaptation in a social milieu.

Nature of Group Psychotherapy

Group psychotherapy involves more than an assemblage of persons with similar aims and problems. Nor does leadership of a psychiatrist in itself constitute group psychotherapy. When the therapist directs treatment toward a particular patient among several this is psychotherapy *in a group*. The relation is between therapist and patient; the selected patient benefits by identification with the leader and his support, but not through sharing group interaction. This is in contrast to psychotherapy *through* a group — the true group psychotherapy; here the interaction of the group, the psychologic effect of members upon each other, is the therapeutic agent. There is considerable difference in the technics involved and in the benefits received.

The neurotic person avoids social groups, fears criticism and is afraid to exchange his isolation for social satisfactions of which he cannot be sure. In a well conducted therapeutic group patients gain security through their acceptance by the leader and other members of the group. The therapist often represents the good parent, consistent, understanding and nonpunitive. As the members become used to one another he withdraws, throwing them more and more upon each other, deflecting their dependence from himself to the group. Emphasis is placed upon constructive achievement and emotional maturation. The group becomes a substitute for lack of gratification in early life.

Accessory technics and settings vary with the patients, their ages and their problems. Groups should be small, usually not more than seven or eight members. The room, the therapist and the time of meeting should remain the same, these constant elements affording a sense of security.

Types of Group Psychotherapy

The method employed by the psychotherapist depends directly upon his orientation. The Freudian analytic method, with loosening of repression and the conscious recognition of asocial desires, has as its aim the freeing of energy bound in needless repression. The patient is expected to find his own social outlets. This method is used by Schilder and members of his school. Schilder believes that the patient must gain insight into social and psychosexual adjustment and into premature solutions that were formed in childhood. His outpatient group therapy makes patients realize that thoughts that they have allowed to isolate them are similar to the thoughts of others. The patients' autobiographies are read and discussed by the group, the patient having the benefit of their interpretation as well as that of the therapist. The objective of treatment is to bring the patient to mature adult development.

At the opposite end of the scale is the inspirational method, which relies to a large extent upon suggestion and the contagion of useful emotions. The patient is urged to control his behavior, to suppress asocial and harmful thoughts, and to find inspiration in religion and life work. This method is utilized by many religious groups and by Alcoholics Anonymous.

Between the analytic and the inspirational types of group therapy is a third, which employs the best elements from each, utilizing both conscious and unconscious mechanisms. Through re-education the patient is helped to understand his problems. A corrective, stabilized life is instituted, and personality reintegration is effected.

Dynamics

Group psychotherapy offers values not available through individual treatment alone, and has inherent merits dependent upon specific factors.

The family is a social and emotional unit in which the child is dependent and submissive, or else rebellious toward the authority of parents — this is often complicated by sibling rivalry. Primitive instincts must be replaced by social instincts, and in this process of personality development the group affords reassurance not always found in the home. In this group the therapist symbolizes the loving parent who does not retaliate to hostility. Emotional releases are permitted, repressed conflicts with parents and siblings may be acted out, and a new perception of self is gained.

In a psychotherapeutic group there is a fluid, changing relation. Assured of emotional support from their leader and peers, patients may test reality situations in the group without fear of reprisal. Emotional tension is released, and conflicts are resolved, with a lessening of anxiety. Insight is gained by a comparison of personal experience with the experience of others. Rejecting parents meet parents with similar problems. Persons laden with guilt find themselves no longer unique and with no further need to be isolated. Combat veterans discover the normalcy of fear.

To dispel ignorance and correct distorted attitudes, specific information is given through re-educational lectures, with varying degrees of participation by the group. Patients with tuberculosis, peptic ulcers, diabetes, heart disease and even some psychoses respond to this treatment as readily as psychoneurotics do. The force of example, seeing others with the same difficulty making a success,

is encouraging. Alcoholics Anonymous employs this psychologic technic, and military groups utilize the presence of combat veterans strong in their desire to return to duty. Because of the contagion of emotion, abreaction is of limited use in a group. It has been successfully employed to remove fear through desensitization and acting out of the situation with the accompanying fears. Aggression may be released, but must be tempered, for emotionally disturbed patients react badly to displays of anger or hostility.

Guilt is dispelled, and feelings of failure lessened through the sharing of common knowledge and the common purpose of the group. Preliminary catharsis aids this function. Group purpose can be contagious, particularly when combined with the spirit of teamplay. All members must have a common goal, as those who do not sabotage the effort of the group. The group, however, must be tolerant toward the members who cannot yet enter into activities wholeheartedly.

Successful adaptation and acceptance within the group give rise to new confidence, loss of sense of inferiority and lessening of self-consciousness. Tolerance toward one's self and others is gained, with better understanding of the needs of others. Once he has attained this tolerance the neurotic learns to forgive himself and others. In the group the necessity for reasonable compromise soon becomes apparent, and such compromises become acceptable to the patient as desired results are obtained.

Aims and Limitations of Treatment

Aims and limitations of treatment should be established early. These are dependent upon the training and skill of the therapist, the patient being treated and his problems and his capacities. Careful and accurate diagnosis helps to establish objectives and to indicate results that may reasonably be expected.

Catharsis is palliative and temporary. Supportive treatment — giving sympathy, understanding and some environmental manipulation — is also palliative, and is not designed to cure. Integrative treatment aims at a cure through the approach that all psychoneuroses are the result of unconscious conflict; the objective is recovery, and the therapist is the guide toward a better way of living — a balanced life.

The Role of the Therapist

The psychotherapist must be sensitive to group reactions. In 1940 Schilder commented that the psychiatrist who uses group therapy to gratify his curiosity, feeling of superiority or sexual interests, or to receive admiration, and who is the object of the patient's sex desire is but the target for hatred and criticism in their symbolic expression of early childhood formations. His success as a therapist depends upon his ability to understand his own tendencies to incomplete experiences and patterns of infantile reaction. Psychiatrists on the whole do not have the personality that intuitively takes to group leadership. Many enter this field of medicine with personality difficulties, conscious or unconscious. These psychiatrists tend to keep their problems secret, and therefore favor an isolated type of treatment. Secrecy of motivation is a fundamental characteristic of a neurosis, and the first step in treatment is to do away with it. In a group the physician is less authoritative; with courage gained from others the patient may challenge the physician and express hostility toward him.

A directive leader who gives a lecture, or who acts as chairman of a seminar, and who more or less controls group reaction can give information and teach the principles of re-education, but he does not contribute to group interaction; the patient identifies himself with the leader and not with the group. Too close or prolonged identification with the leader, undiluted by identification with the group, recreates the parent-child situation, and if therapy is attempted in the group it leads to rivalry among the members.

The permissive leader gradually withdraws from the group and enables the members to *re-learn* new attitudes toward authority and toward the group. He retains his importance only in the early sessions when it is necessary for him to amalgamate the group in a common purpose; this accomplished, he deflects the dependence and identification from himself to the group itself, aiding the patient in his first steps toward the socialization that is one of the prime objectives of group psychotherapy. The leader becomes less and less active in the group, as through group interaction the patient progresses toward mature adult relationships; success therein enables him to attempt with confidence to adjust to outside groups and personal relations that he has hitherto feared. When he has arrived at this point, he has no further need for the leader, and treatment may be considered a success.

Personnel of the Group

The selection of the group is dependent on the aim, the problem of the patient and his age, as well as the training of the therapist, the time available and the setting. Group psychotherapy is designed primarily for psychoneurotics. All psychoneurotics have basic difficulties in relating themselves to others. Analysis and insight do not necessarily solve this difficulty, for the patient is left without psychologic tools, skills, practice in social adaptation or sufficient security to relate to the family in which his patterns of neurotic reaction were laid, or to the ordinary social groups in which he has never been at ease nor felt that he was accepted. As he relives his experiences as a rejected child, he needs guidance and exposure to a therapeutic group in which he can attain success before he ventures

into what are to him threatening social situations in which he feels inadequate.

Through satisfying group experiences, emotionally disturbed adolescents and rejecting parents learn to deal with frustration and to find compensations and sublimations. They discover that it is more comfortable and wiser to deal with their own fear, anger and hostility, and that of others, tolerantly and with good humor. As they mature emotionally they learn to fight nobly and effectively, not primitively and unsuccessfully.

Psychopaths and psychotics are usually not treated by group therapy. If this method is to be used, they should not be included in groups made up of psychoneurotics or of patients who are only slightly disturbed.

Future Goals

Group psychotherapy is a new type of psychiatric endeavor; experience in this field is limited, and there is much to be learned about it. Just as a very careful choice of the members of the group is required, the psychotherapist must be even more carefully chosen. Unfortunate and harmful reactions stimulated by group psychology must be held to a minimum. There has been little follow-up study, and the literature indicates that results have been too optimistically interpreted. All future reports must be carefully scrutinized. The newly organized society for the study of group psychotherapy will have a great deal to do with the stabilization and standardization of technics and the extension of new knowledge regarding this promising field.

Some of the intrinsic values of group psychotherapy have been demonstrated, and under wise leadership this contribution to mental health may be considerable. One of the outstanding merits of this form of psychotherapy is that it is practical. Small treatment units similar to those for the treatment of medical problems and for behavior problems in children may be set up throughout the country. This can be done for the psychoneurotics in general hospitals, where patients at no great cost can participate daily in group re-education. Group re-education in accordance with the Freudian technic has been given by Lazell at St. Elizabeth's Hospital with considerable success. Paroled psychotics who have recovered from acute episodes in the convalescent period can benefit from group psychotherapy in selected settings. It offers an opportunity to continue treatment on a wider scale outside an institution, to observe progress and to prevent unnecessary psychotic recurrences. It would be of inestimable value to have marital and family clinics where erroneous basic concepts could be eliminated and serious damage to personality prevented. Child-guidance clinics, with concurrent parental education, afford a natural opportunity for the organization of fathers and mothers for group psychotherapy.

Summary

The original purpose of group psychotherapy was to make treatment available to greater numbers. Its present impetus came in World War II, with extensive use in the armed forces, later in veterans' hospitals and more recently in clinics, psychiatric units and private practice.

The patient finds in the group emotional satisfactions that he was denied in childhood and has not found outside the family. Through discussion he attains a degree of desensitization and comes to realize that he is not different from others. Too close family attachments are diluted, and often he is able to make a transference from one person, upon whom he has been dependent, to a group of equals.

Group psychotherapy is particularly applicable to psychoneurotics, adolescents and rejecting parents.

Treatment is not dependent primarily upon the therapeutic relation between psychiatrist and patient, but upon interaction between members of the group. Some groups rely upon discussion and group interaction alone, but the most effective group therapy combines these with individual interviews and a twenty-four-hour daily program.

The three most widely used methods are the analytic, the inspirational and the re-educational-integration, combining the chief values of the first two methods with a definite teaching of mental-hygiene principles.

In this new form of psychotherapy overenthusiasm of therapists and noncritical evaluation of results may be detrimental to sound practice and good psychiatric technics. Group psychotherapy has demonstrated its value, not merely as a time-saver and a relatively inexpensive method of treatment but also as one that has intrinsic values not found in individual therapy alone. The patient is regarded as a social being, and in the group is given opportunity for discovering and practicing the principles of social adaptation.

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LOCAL HEALTH SERVICES IN MASSACHUSETTS

ROBERT E. ARCHIBALD, M.D., M.P.H.,* AUTINO FIORE, M.D.,† AND SOLOMON L. SKVIRSKY, M.D.‡

BOSTON

MASSACHUSETTS has long been recognized as a leader in many phases of public health. However, there has been a considerable lag in the provision of adequate local health facilities, owing in part to the heritage of local autonomy. Our interpretation of adequate facilities is the complete coverage of the state by local health units, conducted by the official governing body of the units and financed wholly or in part with local funds. These units should be staffed with full-time, well trained personnel rendering at least basic health services to all people of the Commonwealth. Until such local health units become a reality, a sound public-health program cannot be administered in an efficient, economic and competent manner. The primary purpose of this paper is to present a critical evaluation of existing official local health facilities in Massachusetts.

SERVICES

Local health units should provide the six so-called minimum services recommended by Dr. Haven Emerson[1] in his report on local health units for the nation. These include the control of communicable diseases; environmental sanitation; hygiene of maternity, infancy and childhood, including the supervision of the school child; public-health laboratory services; health information; and vital statistics. The control of chronic diseases should be added, since this is being regarded more and more as a basic health service. Actually, the activities of any given health department must fit the particular health situation of the community served. Therefore, further extension of services may include accident prevention, dental care, nutrition, mental hygiene, industrial hygiene, medical social service, housing surveys, hospital surveys and construction, and certain medical care programs. One of the most important responsibilities of the administrator of a local health unit is to set up a health program that provides maximum health benefits.

PERSONNEL

To render necessary health services, a well trained professional staff is essential. Health departments should serve units of population of sufficient size to make possible the full-time employment of personnel. Emerson recommends that a unit serving 50,000 persons should have a staff consisting of a full-time public-health physician, a full-time sanitary engineer, a sanitary inspector, 10 public-health nurses, 1 of whom should be of supervisory grade, and 3 clerical workers. This is considered basic personnel required by health units. Actually, the type and number of personnel employed will depend upon the size of the population served and the scope of the health program planned.

*Director, Division of Local Health Administration, Massachusetts Department of Public Health.

†Epidemiologist, Division of Local Health Administration, Massachusetts Department of Public Health.

‡Assistant director, Division of Local Health Administration, Massachusetts Department of Public Health.

STATISTICAL DATA

Massachusetts has a total population of 4,493,281 (1945 Census). Its area covers 7838.7 square miles with a density of 573.2 persons per square mile. There are 39 cities and 312 towns, with average populations of 76,577 and 4,829 respectively. Metropolitan Boston, which includes 43 communities, has 2,066,100 inhabitants, or 46 per cent of the total population.

The state is composed of 14 counties (Table 1). Community population is given in Table 2, which shows that 317 communities, representing 90.3 per cent of all the cities and towns, are inhabited by only 33.7 per cent of the total population. On the other hand, 66.3 per cent of the total population resides in only 34 or 9.7 per cent of the 351 communities.

It is evident that the bulk of the population is situated in a few communities, which for the most part should be able to provide necessary funds for adequate local health facilities and services. However, many communities with relatively small populations are economically unable to do so.

LAWS PERTAINING TO LOCAL HEALTH UNITS

The *General Laws* (Ter. Ed.) provide that every town shall elect three members of the board of health for a term of three years, if the town provides such a board; otherwise, the board of selectmen shall act as the board of health.[2]

In each city, the board of health shall consist of three persons appointed by the mayor, except in any city authorized to have a different type of organization by a special legislative act.[3] One member of the board shall be a physician. Also, provisions are made whereby a city or town may create a health department to replace the board of health, and specific procedures for making this change are outlined by law.[3]

It is possible for two or more towns, by vote of each, to form a district for the purpose of employing therein a health officer and necessary assistants and clerks. The law gives specific instructions for

the formation of a health district, and forbids any city to join such a union.[4]

Any governmental unit, including a city or town, may enter into an agreement with one or more other governmental units to perform jointly any service, activity or undertaking that each contracting unit is authorized by law to perform.[5]

The County of Barnstable is authorized to appoint a county health officer.[6] This is the only permissive law that allows a county to employ a county health officer.

By law, the school committee appoints school physicians and nurses. However, in cities where the medical inspection prescribed was substantially provided by the board of health on the date of the act (1906), the board of health was allowed to continue the appointment and assignment of school physicians and nurses.[7] In some communities, local boards of health assume responsibility for medical inspection of parochial and private schools.

TABLE 1. *Population and Number of Cities and Towns in Each County (Based on 1945 State Census).*

COUNTY	CITIES	TOWNS	POPULATION
Barnstable	0	15	38,216
Berkshire	2	30	127,620
Bristol	4	16	373,619
Dukes	0	7	5,050
Essex	8	26	519,333
Franklin	0	26	51,066
Hampden	4	19	351,757
Hampshire	1	19	74,375
Middlesex	11	43	1,022,331
Nantucket	0	1	2,870
Norfolk	1	27	363,410
Plymouth	1	26	180,318
Suffolk	3	1	860,709
Worcester	4	56	522,607
	39	312	4,493,281

TABLE 2. *Distribution of the 351 Communities by Population Groups (Population Figures Based on 1945 State Census).*

POPULATION GROUP	NO. OF COMMUNITIES IN GROUP	PERCENTAGE OF COMMUNITIES IN EACH GROUP	TOTAL POPULATION IN EACH GROUP	PERCENTAGE OF POPULATION IN EACH GROUP
Over 500,000	1	0.3	766,386	17.1
100,000-499,999	8	2.3	1,007,396	22.4
50,000-99,999	9	2.6	601,059	13.4
25,000-49,999	16	4.5	601,823	13.4
10,000-24,999	44	12.5	724,789	16.1
5,000-9,999	53	15.1	390,615	8.7
Under 5,000	220	62.7	401,213	8.9
Totals	351		4,493,281	

RESPONSIBILITIES OF BOARDS OF HEALTH

Every board of health must organize annually and select one of its members as chairman. They may appoint agents to act for them in cases of emergency, or if they cannot conveniently assemble. This agent will have all the authority of the board and will be directly responsible to it. The board is charged primarily with the responsibility of preventing disease dangerous to the public health among the people within their jurisdiction by all reasonable and lawful methods. These methods include the carrying out of specific duties delegated to them by law and the adoption and enforcement of reasonable local rules and regulations.

Scientific advances, especially in the fields of bacteriology and immunology, and the demonstration of what may be accomplished in health promotion by the dissemination of information have greatly expanded the scope of public-health activities during recent years. Traditionally, boards of health have been thought of chiefly as exercising broad police powers through the right to license, to abate nuisances, to condemn unfit dwellings and to order personal or property quarantine. Although environmental sanitation is still very important, recent trends have brought health departments and their personnel more directly in contact with individuals or groups of persons by programs in preventive medicine, diagnostic services and follow-up home visits under the direction of the family physician. Thus, a logical and necessary expansion in public-health activities has occurred.

TABLE 3. *Classification of Health Officers.*

CLASSIFICATION OF HEALTH OFFICERS	NO. OF COMMUNITIES	PERCENTAGE OF COMMUNITY IN GROUP	POPULATION OF EACH GROUP	PERCENTAGE OF POPULATION IN EACH GROUP
Full-time medical health officers	10	3	1,559 052	34.7
Full-time lay health officers	45	13	1,485,887	33.1
Part-time medical health officers	38	11	296,928	6.6
Part-time lay health officers	145	41	749,407	16.7
No health officer listed	113	32	402,007	8.9
Totals	351		4,493,281	

LOCAL HEALTH UNITS

Independent local health units are maintained by all of the 351 communities in Massachusetts. Separate boards of health exist in 232 communities, whereas the selectmen act as such in 107 additional towns. Health departments have been established by 9 communities. The public welfare commission assumes the duties of the board in one city, and in another city the board of health and the board of charities are combined. In the town of Nantucket, which is a separate county in itself, the county commissioners also function as the board of health. A physician serves as a member of the board in but 132 communities.

Table 3 shows a grouping of communities based on a classification of health officers.

Except for established health departments, all health officers derive their authority from their appointments as agents of the boards of health.

The director of a local health unit should be a full-time, medically trained health officer. Services rendered by a health unit are such that a physician trained and experienced in modern public-health practice is best qualified to serve as a director.

Table 3 reveals the lack of full-time health officers, especially in the many communities with relatively small populations. Only 34.7 per cent of the population is served by health units employing full-time medically trained health officers. The full-time nonmedical health officers, serving 33.1 per cent of the population, have made a remarkable and praiseworthy contribution to the health administration of their communities. They have demonstrated their ability to hold responsible positions in public health, and there will always be a place for the experienced or trained nonmedical health officer. The part-time officers are handicapped by the limitations inherent in such employment; their situation does not encourage efficiency or economy.

TABLE 4. *Public-Health Nurses in Massachusetts according to Employing Agency.*

Official Agency	Total No. of Nurses	Voluntary Agency	Total No. of Nurses
Massachusetts Department of Public Health	31	Visiting Nurse Association	585
Boards of health	391	Insurance companies	17
School committee	306	Red Cross	10
Other	36	Others	3
	764		615

Barnstable

A county health department, authorized by the General Court, was established in Barnstable County in 1926. Independence of the board of health of each town is maintained in that the county health officer acts as agent only for the boards of health that specifically appoint him to do so. Towns preserve their full rights of local control, and some of them employ their own agents, inspectors and nurses. Health regulations of the towns are not uniform. The county health officer is not given adequate authority, and his knowledge and experience cannot be utilized to full advantage. This type of health organization is not sound.

Local District Health Units

In 1927 legislation was passed to permit the formation of health districts by unions of towns, small communities being allowed to avail themselves of the services of an adequately staffed full-time health department. The significance of that native feeling of local self-sufficiency may be appreciated by the fact that no towns have ever taken the initiative in forming such a union. However, in 1930, under a co-operative arrangement with the Commonwealth Fund, the Massachusetts Department of Public Health began to organize two separate local health units, one of 15 towns in the Southern Berkshire area, and another of 14 towns in the Nashoba Valley. A difficult task was accomplished in convincing the boards of health of the need for centralizing their health activities. By 1931, the two units were established. Each unit represented a voluntary grouping of towns, for the purpose of demonstrating the advisability of co-ordinated full-time health services not obtainable by the individual communities.

The director of each unit received his legal status by being appointed agent of the constituent boards of health. The local boards did not lose their identity or relinquish any of their prerogatives. The towns could vote themselves out of the union whenever they so desired. During the years of demonstration, the Commonwealth Fund financed the project with the expectation that the communities would realize the value of such a health district, and would assume complete financial responsibility. This did not materialize in the Berkshire Unit, which ceased to function in 1940 because of insufficient funds. The director of the Nashoba Unit resigned in 1943. War-time manpower shortages made it impossible to fill the vacancy. However, the Nashoba Associated Boards of Health organized a skeleton force and continued its activities on a limited scale.

The law permitting towns to join and form health units has not met with success in Massachusetts. There are two inherent weaknesses in the law. First of all, unions of towns are usually not contained within any established governmental unit and hence are difficult to administer. Secondly, towns may withdraw from the union, thus assuring no stability to it.

A medical director assumed responsibility for the Nashoba Health Unit on July 1, 1948. In conjunction with the Harvard School of Public Health, plans have been made for the development of a public-health field-training center in this unit, which at present is composed of nine towns. It is expected that the reorganized Nashoba Unit will demonstrate to other communities a workable solution of their local health problems.

Nursing Service

Every community in Massachusetts has some public-health nursing service administered by either official or voluntary agencies or a combination of both. Voluntary agencies are included because of the direct services they render to communities. Table 4 shows the number of nurses employed by each agency. There are approximately 1379 public-health nurses in the Commonwealth exclusive of industrial nurses, whose activities are mainly limited to industry. This would give a ratio of 1 nurse to each group of 3379 residents, if the distribution of nurses were even. However, the larger cities employ the majority of these nurses — for example Boston alone has 276 nurses. Also, 44 of the school nurses are employed part time. Therefore, the

above ratio does not indicate the true nursing facilities.

The 1379 nurses in Massachusetts are employed by a total of 452 agencies. There are 97 communities with school nursing service only, and 90 communities with but 1 nurse carrying on generalized nursing services. There are 123 communities with more than 4 nurses whose activities are directed by three different agencies. Only 18 communities have agencies with a full-time nursing supervisor. Thus, although some of the small communities are urgently in need of more complete nursing service, many other communities have three or more agencies employing numerous nurses whose activities are not co-ordinated, whose services often overlap and whose programs actually are at times conflicting. Poor distribution of nurses, multiplicity of employing agencies, lack of adequate nursing supervision and the shortage of properly trained nursing personnel all combine to decrease the efficiency of public-health nursing. In addition, many nurses are employed in specialized programs that limit their nursing activities. The principle of generalized public-health nursing should be adopted for greater nursing benefits and for economy. Also, communities and agencies should in some way pool their nursing resources and work together as one team.

Sanitarians

The health units of 37 communities employ full-time sanitarians, and 118 employ part-time sanitarians. In 71 communities, the agent or some other employee of the board of health, in addition to his other duties, acts as the sanitary officer. In 110 communities, the services of a sanitary officer are not available, and it is assumed that some member of the board of health acts as sanitarian when the occasion arises. The remaining 15 communities jointly employ four full-time sanitarians. Thus, only 14.6 per cent of the communities have full-time sanitary officers, and 31.3 per cent are without the services of a sanitarian. The 220 towns with a population of 5000 or less can hardly be expected to employ full-time trained sanitarians unless they decide to combine their resources, as was done by the 15 communities mentioned above.

Nutritionists

There are approximately 30 full-time and 13 part-time nutritionists in the Commonwealth. The Greater Boston area accounts for 25 full-time and 11 part-time nutritionists, and Springfield, Lowell, Lawrence, Beverly, Pittsfield and Framingham account for the remainder. All other communities must depend upon the nutritional services offered by the Department of Public Health or voluntary agencies.

Conclusions

Adequate facilities are not available for the provision of basic health services to all citizens of Massachusetts. The problem especially concerns many small communities, economically unable to provide these facilities and yet reluctant to form co-operative health units for the purpose of employing a sufficient number of trained personnel.

A duty and responsibility of civil government is to provide its citizens with all benefits conducive to maximum health and well-being. In 1797, the legislature authorized each community to provide a board of health. However, with the many changes that have occurred in all aspects of living, and with the increased medical knowledge, especially in prevention of disease, most local boards are not equipped at present to render modern health services and meet all emergencies. In larger communities, health departments with greatly increased facilities have been established, and progress has been satisfactory. In small communities, expansion has been impossible for economic reasons. Permissive laws have been passed in the hope that these communities would join forces in the battle for health, but to no avail. Since these communities elected to retain their local autonomy, efficient and often necessary health services are lacking because of inadequate facilities.

Local health units, rendering direct services to the people, form the foundation of public health in the nation. Sound public-health programs can be best administered through sound local health departments, covering the entire population. On the basis of existing facilities and laws, such health units are not feasible in this state. Massachusetts needs new laws and increased facilities to keep abreast of public-health progress.

The first and most important step is the enlightenment of the public. Pertinent information must be disseminated to all citizens, whose understanding and active interest are essential in effecting the changes necessary to correct existing inadequacies. We are indeed fortunate to live in a country in which the lawmakers respond favorably to the will of the people. Therefore, those interested in health must carry on a sustained, vigorous and intensive campaign until the ultimate goal has been attained — that is, the provision through local government of a sufficient number of adequately staffed, full-time local health units, so as to make available at least minimum health services to every person in Massachusetts and over every square mile of the Commonwealth.

References

1. Emerson, H., and Luginbuhl, M. *Local Health Units for the Nation: A report.* 333 pp. New York: Commonwealth Fund, 1945.
2. *General Laws*, Chapter 41, Section 11.
3. *General Laws*, Chapter 111, Section 26, as amended.
4. *General Laws*, Chapter 111, as amended.
5. *General Laws*, Chapter 40, Section 4A.
6. *General Laws*, Acts of 1926, Chapter 133.
7. *General Laws*, Chapter 71, Section 53.

FURTHER STUDIES IN THE USE OF FURACIN IN DERMATOLOGY*

JOHN GODWIN DOWNING, M.D.,† AND F. WELLINGTON BRECKER, M.D.‡

BOSTON

FROM August, 1946, to September 10, 1947, 278 additional cases of dermatoses were treated with furacin (5-nitro-2-furaldehyde semicarbazone) soluble dressing and furacin solution by the Dermatologic Department of the Boston City Hospital. The diseases treated and the results obtained are presented in Table 1. It will be noted that the contributory factor. However, 5 patients have died while under treatment with furacin compounds. Although in no case was the local medication deemed contributory, one cannot rule out the possibility of toxic effects by absorption. Therefore, it would be of extreme value if further studies were made to prove or disprove that the drug is

TABLE 1. *Comparative Results in Diseases Treated.*

CONDITION	RESULT					TOTAL NO. OF CASES
	EXCELLENT	GOOD	QUESTIONABLE	NONE	NO FOLLOW-UP STUDY	
Group I (diseases due to infections with lower organisms):						
Cellulitis	—	2	—	—	—	2
Infectious eczematoid dermatitis	2	26	7	10	14	59
Ecthyma	—	21	3	2	6	32
Impetigo contagiosa	9	73	3	3	38	126
Sycosis vulgaris	—	4	1	1	3	9
Furuncle	—	—	1	—	4	5
Folliculitis	—	1	1	—	2	4
Group II (diseases due to higher plant or animal parasites):						
Tinea capitis (*Microsporum audouini*)	—	—	—	2	—	2
Group III (diseases due to intoxication):						
Dermatitis venenata	—	—	—	2	—	2
Group IV (diseases due to trauma or physical agents):						
Ulcer (decubitus)	—	3	—	2	2	7
Infection from second-degree burn	—	—	—	—	1	1
Group V (diseases due to circulatory disturbances):						
Ulcer hypostaticum	—	14	2	3	2	21
Stasis eczema	—	2	—	1	—	3
Group VI (diseases due to metabolism disturbances):						
Acne vulgaris	—	—	—	1	3	4
Group VII (diseases of uncertain cause with structural reaction alone):						
Neurodermatitis	—	—	—	—	1	1
Totals	11	146	18	27	76	278

results obtained were similar to those in the original report.¶ Again, the drug showed itself to be effective in the treatment of pyogenic infections — impetigo contagiosa, ecthyma and hypostatic and decubitus ulcers — and of some value in the treatment of infectious eczematoid dermatitides. However, the danger of sensitization in the latter group prohibits its extended use.

Two elderly women died while under treatment with furacin soluble dressing for decubitus ulcers. One died on the thirteenth day of therapy, and the other on the thirtieth day. They were over eighty years of age, and had been bedridden for years after multiple cerebral thromboses. Bronchopneumonia was the diagnosis at discharge in each case. Furacin soluble dressing was not considered as a absorbed into the general circulation. In all these cases the local destruction of tissue was marked, and large amounts of medication were used.

BACTERIOLOGY

Cultures of the bacterial flora present in the dermatoses treated were made in 59 cases before the institution of treatment. There were 124 strains of 9 species of organisms isolated. The gram-positive organisms — *Staphylococcus aureus*, *Staph. albus*, *Streptococcus haemolyticus*, *Corynebacterium diphtheriae* and diphtheroids — were found in 85.4 per cent of the total cultures. In the gram-negative group there were 10 cultures of *Pseudomonas aeruginosa*, 4 of *Proteus vulgaris* and 3 of enterococci. One case of pyoderma of the left foot showed a virulent *C. diphtheriae* growth and *Staph. albus*. A repeat culture in one week was negative for *C. diphtheriae*, and *Str. haemolyticus* was cultured. From the response noted in this group of derma-

*From the Department of Dermatology, Boston City Hospital.

†Professor of dermatology, Tufts College Medical School; professor of dermatology, Boston University School of Medicine, dermatologist-in-chief, Boston City Hospital and Massachusetts Memorial Hospitals.

‡Assistant dermatologist, St. Francis Hospital, Hartford, Connecticut.

¶Downing, J. G., Hanson, M. C., and Lamb, M. Use of 5-nitro-2-furaldehyde semicarbazone in dermatology. *J. A. M. A.* **133**:299-305, 1947.

toses studied, furacin in solution and soluble dressing is an effective bactericidal agent.

Sensitizing Effect

In consideration of the fact that a change in the base was made, the substitution of polyethylene glycol for propylene glycol, 25 volunteers were patch tested with the newer soluble dressing and the new base for irritant properties; ten days later the same volunteers were retested for sensitizing properties. The tests were applied to the skin for forty-eight hours, and reactions were noted at twenty-four, forty-eight, seventy-two and a hundred and twenty hours. The substances were applied under a 2.5-cm.-square piece of cotton fabric covered with oiled silk and fixed with adhesive tape. The first application of the dressing and soluble base resulted in no reaction at twenty-four, forty-eight, seventy-two and a hundred and twenty hours. The second application ten days later resulted in no reaction in 24 of the volunteers. One subject developed pruritus and erythema, 2 cm. square, after twenty-four hours; this subsided in twenty-four hours, with negative findings at seventy-two and one-hundred and twenty hours, and no desquamation at the site of either test. Twelve cases of sensitivity reaction were noted in this group of 203 cases remaining under observation. Reactions were severe local, erythematous, vesicular and oozing outbreaks, often accompanied by generalized eczematoid dermatitis involving the face, neck, trunk and extremities. Examples of reactions and investigations are best shown by the case reports presented below.

Case Reports

Case 1. L. C., a 26-year-old man, suffered from an infectious eczematoid dermatitis of both lower legs for 6 months, despite treatment with various ointments. On October 31, 1946, he was started on furacin soluble dressing twice daily. One week later he showed considerable improvement, with the lesions drying and less crusting present. On November 19 he reported to the Clinic, his local dermatitis worse and accompanied by a generalized papulovesicular eruption. Treatment was suspended, and cornstarch baths were prescribed twice daily. The patient's condition became worse despite soothing applications. On November 26 he was hospitalized with a generalized eczematous dermatitis; the face and legs were edematous and covered with oozing and crusted lesions. Under continued bed rest, baths and soothing applications, the dermatitis subsided in 2 weeks. The patient refused patch tests and further investigation.

Case 2. J. C., a 38-year-old woman, had an eczematous dermatitis of 5 years' duration on the right ankle and dorsum of the foot. Examination showed an irregular, infiltrated area of eczematous dermatitis, 7.6 by 10.2 cm. in diameter, over the lateral aspect of the right ankle and dorsum of the foot, with ulcerated areas covering most of the lesion. Moderate varices of the right leg were noted; serologic examination of the blood was negative. Daily application of furacin soluble dressing with bandaging was instituted on January 22, 1947. It was continued with slow improvement of the dermatitis and healing of the ulcerations until February 13, when the lesions on the foot showed decided increase in erythema and oozing, accompanied by a generalized papular and eczematous dermatitis. Treatment was discontinued. Cornstarch baths and soothing applications were prescribed, with general clearing of the dermatitis and symptoms in 3 weeks. On March 4 the patient consented to patch testing, with the following combinations of ingredients and results: furacin powder in vaseline (0.2 per cent), negative; carbowax (1540 in vaseline), negative; furacin powder in polyethylene glycol, ++++; carbowax (4000 in vaseline), negative; furacin base (polyethylene glycol C.W.1540 and 4000), negative; furacin and carbowax (1540-4000), negative; furacin soluble dressing (whole product), ++; and polyethylene glycol, doubtful.

Case 3. A.B., a 32-year-old man, gave a history of recurrent attacks of infectious eczematoid dermatitis of both legs. On January 17, 1947, he showed vesicular, crusted and oozing lesions extending from the midleg to the ankles. The past history indicated a poor response to various topical medication. A patch test with furacin soluble dressing to the left deltoid area was negative at 24, 48 and 72 hours, and daily

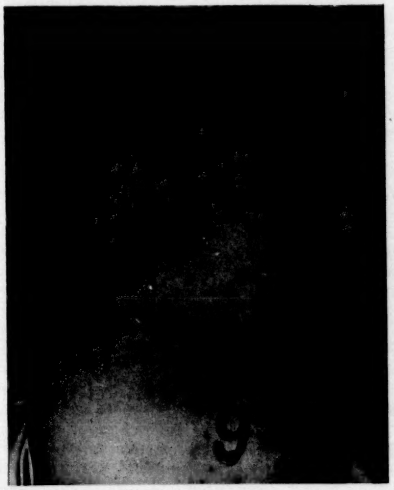

Figure 1. *Positive Reactions in Case 3 at Sites of Furacin Soluble Dressing* (3) *Furacin Topical Solution* (5) *and Furacin Powder in Polyethylene Glycol* (6).

applications of the dressing were started on January 20. Two days later the patient complained of increased burning and itching after application. Examination showed increased erythema, vesiculation and serous discharge over the involved areas. The eruption slowly improved under boric acid wet dressings and plain Lassar's paste daily. Four weeks later patch tests were performed with the various combinations of ingredients and results noted as follows: furacin powder in vaseline (0.2 per cent), negative; furacin and carbowax, negative; furacin soluble dressing (whole product), +; furacin base (polyethylene glycol C.W.1540 and 4000), negative; furacin topical solution, ++; furacin powder in polyethylene glycol, +++; polyethylene glycol, doubtful; and carbowax (4000 in vaseline), negative. The reactions to furacin are shown in Figure 1.

Case 4. P. M., a 60-year-old man came to the Skin Clinic on February 20, 1947, showing on both legs ecthymatous lesions of 3 weeks' duration. Prior treatment had consisted of boric acid ointment and Lassar's paste without result. Treatment was instituted with furacin soluble dressings twice daily with gradual improvement and healing of the lesions

until the 27th day, when sensitivity consisting of increased erythema, vesiculation and serous oozing developed at the sites of application. These lesions subsided in approximately 3 weeks with applications of bland ointments. Patch tests were performed with the following combinations of ingredients and results: furacin soluble dressing (whole product), ++; furacin topical solution, +++; furacin powder in polyethylene glycol, ++++; furacin base (polyethylene glycol C. W. 1540 and 4000), negative; furacin powder (0.2 per cent in C. W. 1540 and 4000), negative; furacin powder in vaseline, negative; carbowax (4000 in vaseline), negative; carbowax (1540 in vaseline), negative; and polyethylene glycol, negative.

The results in these cases strongly suggest that the sensitizing effect of the product is due to a synergistic action between the furacin powder and the polyethylene glycol present in the dressing.

Discussion

In addition to the cases reported above, the records of 30 patients treated in private practice showed similar results. In this group 2 patients became sensitized. Both were treated for a recurrence of otitis externa, after an apparent cure several months previously with furacin solution. Within forty-eight hours of reapplication of the substance there was marked erythema, vesiculation and oozing of the skin of the auricle and periaural area. Several other cases of sensitization were seen in the office of one of us (J. G. D.), as well as in various state and federal institutions. These sensitizations were for the most part severe and disabling, necessitating hospitalization for weeks. With this increase in the number of untoward reactions, one becomes very careful and somewhat hesitant about prescribing these compounds, for it is difficult to foresee which patient will become sensitized. It is apparent that the longer the drug is used, the greater is the reaction to sensitivity.

It is believed that the number of these reactions will increase when the drug is used the second time, either for a recurrence of the previous eruption or for another pyogenic dermatosis. It might be noted in the patch tests that the furacin in addition to carbowax caused no reaction. Apparently, some chemical reaction from the combination of the polyethylene glycol and the furacin powder gives the sensitizing factor. Throughout the studies it was apparent that the best results were obtained in the use of the compounds in pyogenic infections not sensitized — namely, impetigo contagiosa, ecthyma and otitis externa. The success of the compounds as noted by the subsequent cultures show that furacin is an effective agent in reducing infection. We therefore believe that if the element of sensitization were reduced, this drug would be of greater value in the treatment of pyogenic infections of the skin. Case 3 shows the futility of pretreatment patch tests.

Summary

Two hundred and seventy-eight additional patients were treated at the Dermatologic Department of the Boston City Hospital with furacin (5-nitro-2-furaldehyde semicarbazone) in a soluble base and in topical solution. Two hundred and forty-five patients were treated with the product in the soluble base, and 33 with the topical solution of the product.

No noticeable difference in effectiveness in the soluble dressing and topical solution was noticed, with the posssible exception of ease of application of the different products — that is, the solution was used in infectious eczematoid dermatitis in a group of cases secondary to ear infections with greater facility of application than the soluble base containing the product, whereas the soluble base seemed more satisfactory for use in ecthyma and ulcer cases.

The substitution of polyethylene glycol for propylene glycol in the product caused little or no sensitization of normal skin in a group of 25 volunteers tested.

The effectiveness of the compounds as noted by subsequent cultures showed that furacin is an effective agent in reducing infection.

Sensitization to the drug was noted in 12 out of 203 cases remaining under observation at the hospital, and in 2 out of a group of 30 cases seen in private practice, which makes over 6 per cent sensitization. This percentage is considered too high.

Sensitivity is apparently due to a synergistic action of the furacin powder and the polyethylene glycol on the abnormal skin treated.

With this high rate of sensitization, extreme care in the selection of cases and careful supervision of the patients using these compounds are recommended.

MEDICAL PROGRESS

CLINICAL AND PATHOLOGICAL ASPECTS OF ENCEPHALITIS*

RAYMOND D. ADAMS, M.D.,† AND LOUIS WEINSTEIN, M.D.‡

BOSTON

A GREAT deal of confusion appears to exist in the minds of many physicians regarding the criteria necessary for the diagnosis of encephalitis. There is a common tendency on the part of clinicians to designate as encephalitis any disease in which fever and neurologic symptoms are conjoined. In the New England states and probably in many other areas of the United States this diagnosis almost invariably proves to be incorrect at autopsy. The pathology in such cases usually turns out to be bacterial endocarditis with multiple brain emboli, tuberculosis or torulosis of the meninges, thrombophlebitis of cerebral vessels, tumor, vascular disease or abscess of the brain. Sometimes there are no demonstrable neuropathologic lesions, and by inference a diagnosis of acute "toxic" or confusional psychosis is reached. The purpose of this brief communication is therefore to present, for the use of general practitioners, some of the salient clinical and pathological features of the various types of encephalitis.

At the outset, an exact definition of *encephalitis* is required. As most generally used, this term signifies an inflammatory disease of the brain; if concomitant involvement of the brain and spinal cord exists the condition is specified as *encephalomyelitis*. Unfortunately, however, a few writers apply these names to a large variety of brain diseases of diverse etiology, some infectious and others not — hence such incongruous terms as "traumatic encephalitis" and "toxic encephalitis." The more restricted meaning is the one used in this paper. Meningitis, in the sense of an inflammatory disease confined to the pia-arachnoid membranes and subarachnoid space, is not included in the present discussion.

To obtain clarity of thought on this subject a sound classification of the various forms of encephalitis is essential. Several have been proposed, though none of them are entirely adequate. The following classification, based on etiology, if known, and otherwise on descriptive pathology, is probably the most satisfactory one available at present and has the sanction of two eminent neuropathologists, Spielmeyer[1] and Greenfield[2]:

- Encephalitis due to visible micro-organisms.
  - Bacterial infections, such as focal embolic encephalomyelitis.
  - Spirochetal infections, such as syphilitic meningoencephalitis (general paresis).
  - Fungous infections, such as torula.
  - Rickettsial disease, such as typhus.
  - Parasitic infections, such as trichinosis, malaria and toxoplasmosis.
- Encephalitis due to filterable viruses.§
  - Encephalitis lethargica.
  - St. Louis encephalitis.
  - Equine encephalitis — Eastern, Western and Venezuelan types.
  - Poliomyelitis.
  - Herpes zoster.
  - Mumps meningitis; ? encephalitis.
  - Lymphocytic choriomeningitis.
  - Infectious mononucleosis — probably of viral etiology.
  - Herpes simplex encephalitis.
    - Encephalitis with intranuclear inclusion bodies —? herpes simplex.
  - Rabies.
  - Lymphogranuloma venereum.
- Encephalitis of unknown etiology.
  - Acute disseminated encephalomyelitis — following exanthems such as measles, vaccination against rabies and cowpox, and serum reactions.
  - Acute hemorrhagic encephalitis.
    - Acute brain purpura.
    - Acute necrotizing hemorrhagic encephalopathy (hemorrhagic leukoencephalitis of Hurst).
  - Encephalitis complicating scarlet fever and rheumatic fever.
  - Acute "toxic" encephalopathy.

PATHOLOGY OF ENCEPHALITIS

The neuropathological changes in this heterogeneous group of inflammatory diseases appear, at first glance, to be hopelessly complex. Not only are the diseases varied but also many of them have a predilection for special parts of the nervous sys-

*From the Neurological Service, Boston City Hospital; the Haynes Memorial and Evans Memorial, Massachusetts Memorial Hospitals; the Department of Neurology, Harvard Medical School, and the Department of Medicine, Boston University School of Medicine.

†Assistant professor of neurology, Harvard Medical School; visiting neurologist and neuropathologist, Boston City Hospital; lecturer in neurology, Tufts College Medical School; neurologist, Joseph H. Pratt Diagnostic Hospital.

‡Assistant professor of medicine, Boston University School of Medicine; physician and chief of service, Haynes Memorial, and assistant member, Evans Memorial, Massachusetts Memorial Hospitals.

§Japanese B, Russian tick-borne, louping ill and Australian X encephalitides are omitted from this classification and discussion because they have not been seen in the United States.

tem. However, a survey of the morbid anatomy will show that there are only a limited number of ways in which the nervous system can react and that some pathological changes, common to all neurologic diseases of this type, depend more on special properties of brain tissue than on the causative agent. For example, nerve cells can only react by degeneration and death, whatever the disease process, and regeneration does not occur. The large amount of fatty material in the sheaths of the myelinated nerve fibers will, if caused to degenerate, excite the formation of phagocytes, both microglial and histiocytic, which form such a prominent feature of all inflammatory diseases. Also, microglia will be activated by the selective degeneration of nerve cells and will assume elongated or pleomorphic forms often arranged in clusters or nodules, a process referred to as neuronophagia. In some diseases, such as rabies and typhus fever, nodules of microglia, histiocytes and inflammatory cells sometimes known by special names — Babes's nodules in rabies — are present. The neuroglial cells or astrocytes undergo hyperplasia in all subacute and chronic diseases and, since there is relatively little fibrous connective tissue in the brain, account for the reparative process — namely, gliosis. Another general feature of all types of encephalitis is the infiltration of the perivascular spaces of Virchow–Robin, which have no counterpart in other organs, by lymphocytes, plasma cells or neutrophilic leukocytes, or all three. This is especially prominent around the cortical and subependymal vessels. The meninges are usually infiltrated with cells of the same type. All these changes — that is, nerve-cell degeneration and neuronophagia, myelin destruction and its removal by macrophages, perivascular and meningeal infiltrates of inflammatory cells and ultimate gliosis — may occur in any inflammatory disease of the brain or spinal cord.

Each of the different types of encephalitis is distinguished pathologically by the presence of the causative agent in the nervous tissue, the character of the lesion and the distribution of the lesions within the brain, spinal cord and peripheral nerves. Demonstration of the causative agent by special stains or by culture is the only means by which a specific diagnosis can be made. This is possible in most of the bacterial, fungous, spirochetal and parasitic diseases of the nervous system and in a few of the virus diseases by the occurrence of inclusion bodies. In other infections, particularly those due to rickettsias and viruses, the etiologic factor has not been isolated or is so difficult to demonstrate that the diagnosis must depend either on the character and distribution of the lesions or on special serologic tests.

The pathological changes in the bacterial, fungous, rickettsial, spirochetal and parasitic infections of the nervous system, with due allowance for the special anatomic peculiarities of nervous tissue, closely resemble those in other viscera. The changes in the brain in such diseases are viewed as part of a generalized infection and are not usually given separate consideration. These general pathological findings are quite well known, having been well presented in most textbooks of pathology, and it is not necessary to describe them here.

Neurotropic viruses, which comprise a large portion of the encephalitides due to viruses, exert their deleterious effects principally on the nervous system and have the following unique properties: they enter the nervous system along nerves and spread by way of neurones from one part to another; they are incorporated into the protoplasm of the nerve cells and form, in some cases, intracytoplasmic or intranuclear inclusion bodies; and they have an affinity for certain groups of neurones.

The nervous system reacts to many of the neurotropic virus infections in a fairly uniform manner. There is evidence of nerve-cell destruction, proliferation of microglial cells, meningeal and perivascular infiltrates of lymphocytes and gliosis. In some of the more strictly neurotropic virus infections, such as poliomyelitis and encephalitis lethargica, neurone damage or destruction is the primary event, and the activation of microglial cells and probably the meningeal, perivascular infiltration are secondary. This type of reaction is so characteristic that the pathologist is probably justified in inferring from its presence the existence of a virus. The occurrence of this type of pathological reaction is the chief basis for classifying encephalitis lethargica and herpes zoster as virus infections because in neither disease has the organism been isolated. In other more acute forms of encephalitis, such as St. Louis, equine and Japanese B, however, the brain damage is not limited to the nerve cells. These forms have therefore been called pantropic instead of neurotropic. In these there are scattered petechial hemorrhages, focal areas of tissue necrosis and microglial proliferation, and lymphocytic and neutrophilic leukocytic infiltrates in the gray matter and to a slight extent the white matter. All the proved virus infections of the nervous system are essentially diseases of the gray matter — that is, polioclastic.

Although many types of virus disease of the brain conform to the general type of pathological reaction described above, minor differences between them deserve special emphasis.

In *encephalitis lethargica* (epidemic or Type A encephalitis), as in most infections of the brain, there are usually no gross changes or, at most, only slight opacity of the arachnoid membrane, congestion of vessels in the meninges, occasionally a few petechial hemorrhages in the gray matter and slight brain swelling. There is marked destruction of the nerve cells in the substantia nigra, nuclei

in the hypothalamus, globus pallidus and tegmentum of the pons. Relatively few lesions are seen in the cerebral cortex and cerebellum, medulla and spinal cord. These lesions are of several types. Many nerve cells disappear completely, and others appear altered in several ways — that is, shrunken or chromatolytic. There are nodules of transitional microglial cells and astrocytes and parenchymatous infiltrations of lymphocytes and plasma cells. Lymphocytes and mononuclear leukocytes are also found in the perivascular spaces, chiefly about the veins, in the midbrain, walls of the third ventricle and basal ganglions. Meningeal infiltration is slight. Minute bodies have been demonstrated by toluidine blue and silver stains in the cytoplasm of nerve cells, but a definite opinion regarding their nature has not been expressed. Definite inclusion bodies have not been identified. In subacute cases, inflammatory cells are less numerous, and reparative gliosis more pronounced; in the chronic cases, which are the only ones being seen by present-day pathologists, the chief findings are loss of and degeneration of neurones, especially in the substantia nigra, which may be grossly depigmented, and gliosis (von Economo[3]).

In *St. Louis encephalitis* the lesions are fairly uniformly distributed through the cerebral cortex, basal ganglions and brain stem. Occasionally petechial hemorrhages and congestion of blood vessels are noted. There is a mild leptomeningeal infiltration of lymphocytes and other mononuclear cells at the base of the brain, and the perivascular spaces contain similar cells. The nerve-cell injury varies with the severity of the infection; in severe cases swelling and chromatolysis, or shrinkage of cell bodies and finally disappearance of cells occurs. Focal and diffuse infiltrations of lymphocytes and, in acute cases, neutrophilic leukocytes are found. Neuronophagia is prominent. Foci of tissue necrosis, both interstitial and parenchymatous, with microglial proliferation and gliosis in the gray and to a slight extent the adjacent white matter, are not infrequent (Weil[4]). St. Louis encephalitis differs from encephalitis lethargica in that the lesions are more widely distributed through the cerebrum, the meningitis is more severe, nerve-cell damage in the pallidum and the substantia nigra is less marked, and focal necrosis and microglial proliferation are more extensive. The picture in Japanese B encephalitis is indistinguishable from that of St. Louis encephalitis (Zimmerman[5]). Foci of necrosis with demyelination and, in more chronic cases, gliosis and even calcification with giant-cell formation have been reported. In neither disease are inclusion bodies seen.

In *equine encephalitis* the lesions are also scattered widely throughout the nervous system; the brain stem, basal ganglions and cerebral cortex are involved. In the acute cases there are focal and diffuse lesions with destruction of nerve cells and interstitial tissue and extensive infiltration of neutrophilic leukocytes, lymphocytes and mononuclear leukocytes. The endothelium of the arterioles and capillaries is proliferated; necrosis of endothelial cells, fibrin impregnation and thrombi are occasionally seen in some such vessels. Myelin is destroyed in some of the foci (Farber et al.[6]). The meningeal reaction is more intense, the extent of brain damage including nerve-cell degeneration is greater, and migration of neutrophilic leukocytes is more prominent in the Eastern variety, than in other forms of encephalitis. Actually, however, there are only minor differences between equine, St. Louis and Japanese B encephalitis. In neither Eastern nor Western forms have inclusion bodies been found.

In acute cases of *poliomyelitis* extreme congestion of blood vessels and swelling of the spinal cord may be observed grossly. The greatest damage is in the spinal cord, where, regardless of the distribution of paralytic symptoms, lesions can be found in every segment. The motor cortex, globus pallidus, substantia nigra, subthalamus, tegmentum of the midbrain, pons and medulla and the cerebellum are also involved frequently (Bodian[7]). The lesions are confined to gray matter for the most part and vary in intensity. Nerve cells become shrunken and darkly stained and disintegrate in an incredibly short time. Migration of neutrophilic leukocytes into the affected tissue occurs in the first day or two of the infection and is accompanied and followed by the appearance of transitional forms of microglia and activated histiocytes. Infiltration of the perivascular spaces and meninges by neutrophilic leukocytes, lymphocytes and other mononuclear cells occurs. Neuronophagia is pronounced. Secondary degeneration of motor-nerve fibers and of tracts in the anterior and lateral columns of the spinal cord become evident later. Gliosis is prominent in the older lesions. Pathologists are not in complete agreement about the occurrence of intranuclear inclusion bodies. Poliomyelitis is distinguished from other forms of encephalitis by the more severe affection of the spinal cord and the relative paucity of focal-tissue necrosis.

In *herpes zoster* the lesions are usually confined to one or several contiguous dorsal-root ganglions and their corresponding peripheral nerves and spinal roots (Denny-Brown, Adams and Fitzgerald[8]). In severe cases, part or all of the sensory ganglion may undergo complete necrosis with or without hemorrhage, whereas in milder cases some of the nerve cells survive and necrosis of the interstitial tissue is less severe or does not occur at all. There is degeneration of the fibers of the damaged nerve cells in both the peripheral nerve and dorsal root. The adjacent ventral or motor root may also be affected. The involved ganglions, nerves and roots are infiltrated by lymphocytes, mononuclear cells and a variable number of plasma cells. Often,

similar cells are seen in the pia arachnoid, in the perivascular spaces and in the homolateral posterior and ventral horns of gray matter of related spinal segments. The latter findings, combined with nerve-cell destruction and microglial proliferation, have the aspect of a unilateral poliomyelitis. In addition, cells of the epidermis swell, coalesce, vacuolate and exhibit large intranuclear inclusion bodies (Lipschutz[9]). The latter are not found in the nervous system. In exceptional cases involvement of the brain and spinal cord is widespread, giving a picture of encephalitis or myelitis. Perivascular lymphocytic infiltrations and scattered small perivascular hemorrhages have been found by Biggart and Fisher[10] in the medulla, cerebellar nuclei, thalamus and hypothalamus. Nerve cells at various levels of the brain stem and cortex had undergone chromatolysis. In such cases it is sometimes difficult to exclude the possibility that the zoster infection is a complication of another type of encephalitis.

In the few autopsies that have been performed in cases of *epidemic parotitis* the principal lesions have comprised scattered leptomeningeal and perivascular infiltrations of lymphocytes and other mononuclear cells without definite parenchymatous changes (Larkin[11]). In isolated cases the typical foci of perivenous demyelinization and microglial proliferation that are characteristic of postinfectious encephalomyelitis, or an associated thrombosis of venous sinuses, have been reported.

In the few reports of post-mortem examinations in benign *lymphocytic choriomeningitis* the only significant neuropathologic abnormalities consisted of a leptomeningitis with lymphocytes and other mononuclear cells in the pia arachnoid, subarachnoid and perivascular spaces. Around some of the veins in the cerebral white matter there were small numbers of lymphocytes. Inclusion bodies were seen in the cytoplasm of some of the nerve cells (Viets and Warren[12]).

In the few cases of encephalitis with Type A intranuclear inclusion bodies, there has been degeneration of the nerve cells in the cerebral cortex, especially the precentral and hippocampal convolutions, the basal ganglions, midbrain, pons, medulla and the anterior and posterior horns of the spinal cord. Numerous small foci of necrosis also occur in the gray and white matter. Proliferation of microglial cells and perivascular and slight leptomeningeal infiltrations of lymphocytes were most pronounced in places where the neuronal degeneration was severe (Brain, Greenfield, and Russell[13]).

The central-nervous-system involvement in *infectious mononucleosis* takes the form of a leptomeningitis with the infiltrating cells consisting of lymphocytes, plasma cells and other mononuclear elements of lymphocytic or histiocytic origin (so-called abnormal lymphocytes). In a few cases widespread degeneration of the peripheral nerves and dorsal-root-ganglion cells and extensive infiltrations of these structures by inflammatory cells have occurred. Aside from swelling and chromatolysis of the spinal anterior-horn cells, scattered nodules of glial cells and lymphocytes are the only other important changes in the nervous system.[14–16]

In one of the very few fatal cases of *lymphogranuloma venereum*, post-mortem examination revealed a diffuse meningeal reaction with predominant lymphocyte and plasma-cell infiltration and localized areas of subpial necrosis.

In rabies, there are well marked inflammatory lesions in the sensory ganglions, spinal cord, midbrain, cerebellar cortex, hippocampal convolutions, olfactory bulbs and, sometimes, other parts of the cerebral cortex. Infiltrations of neutrophilic leukocytes and lymphocytes, both diffuse and perivascular, proliferation of microglial cells and astrocytes, nodules of glial and inflammatory cells (Babes) and lymphocytic invasion of the meninges make up the pathologic picture. Nerve-cell destruction is prominent. Characteristic cytoplasmic inclusion bodies (Negri bodies) are found in intact relatively normal nerve cells, particularly those in the hippocampal gyrus and cerebellar cortex. The distribution of the lesions is determined, to some extent, by the location of the wound. In bites of the leg the gray matter of the lumbar sensory ganglions is involved. In some cases of so-called "dumb rabies" the changes are largely confined to the spinal cord and resemble poliomyelitis (Hurst and Pawan[17]).

The pathology of the encephalitides of unknown cause is essentially one of myelin destruction, microglial proliferation and meningeal and perivascular lymphocytic and mononuclear infiltrations. Unlike the known neurotropic virus infections the greatest damage is to white matter, and the nerve cells are affected slightly or not at all — hence the common designation myelinoclastic or leukoclastic encephalitis for this group. The microglial reaction, which develops early in the course of the disease, is probably secondary to damage of myelinated nerve fibers.[18, 19] Thrombosis of veins, although hypothesized as the cause of the demyelinization, has not been found in our material.

There are no important pathological differences between the acute disseminated encephalomyelitis that follows measles, chicken pox, smallpox, injection with cowpox or rabies vaccine, and possibly allergic reactions to heterologous protein such as horse serum. All are alike so far as the myelin is destroyed in minute perivascular or subpial foci, the axis cylinders are damaged to a much less degree and necrosis of interstitial tissue does not occur. Although this condition follows certain acute exanthems believed to be caused by a virus, no causative agent has been isolated from the nervous system.

It has been suggested that acute disseminated encephalomyelitis and acute multiple sclerosis or even Schilder's disease are related. At present, however, the differences between these diseases are far more impressive than the similarities, and there is no substantial evidence that either multiple sclerosis or Schilder's disease is inflammatory.

Acute hemorrhagic encephalitis, acute necrotizing hemorrhagic encephalopathy and hemorrhagic leukoencephalitis are names that refer to a pathologic process consisting of hemorrhage and necrosis of the brain tissue. Although cases of this type are more frequent during epidemics of encephalitis, they occur sporadically at other times. From a review of our material and other published cases,[20] we have concluded that at least two different disease entities had been described under this heading. In one type there is one large area or several smaller confluent areas confined either to the cerebral white matter or to the brain stem, with extensive necrosis of all tissue elements including many of the small blood vessels, exudation of fibrin and migration of neutrophilic leukocytes in the damaged brain and adjacent leptomeninges. This usually takes a rapidly fatal course, although subacute and chronic cases with corresponding differences in pathology are known. They have all the aspects of an allergic inflammation. The other type is essentially a brain purpura with petechial hemorrhages and small nonhemorrhagic perivascular foci of tissue damage that are widely disseminated through the white matter. A proliferation of microglial cells and histiocytes in these foci can usually be demonstrated, but inflammatory reaction is entirely absent. The degree of damage to myelinated nerve fibers and the ease with which it can be demonstrated depend somewhat on the duration of the disease. This type of brain purpura is more suggestive of a toxic damage to blood vessels than an encephalitis in the strict sense of the word. Viruses or bacteria have not been identified in either of these two types of lesion.

The other forms of encephalitis of indeterminate etiology lack precise pathological definition. In fatal cases of scarlet fever a variety of different pathological changes, such as brain hemorrhage, embolism and hemorrhagic necrosis, have been described. However, very few such cases have been examined by present-day pathological technics. From the most authoritative writings on rheumatic fever it seems reasonably well established that Aschoff bodies do not occur in the nervous system. Furthermore, most of the reported cases of so-called rheumatic arteritis do not stand careful scrutiny. Even for Sydenham's chorea, an accepted neurologic complication of rheumatic fever, there is no assignable morbid anatomy. Additional pathological studies of cases of rheumatic fever and scarlet fever with aseptic meningitis and neurologic symptoms are needed.

There is the same uncertainty concerning the pathologic changes in the exceptional cases in which an injection of tetanus toxoid or T.A.B. vaccine has been followed by a meningoencephalitis or myelitis (Palmer[21]). Autopsy has disclosed findings identical with or very closely resembling those of poliomyelitis in some cases and postvaccinial encephalomyelitis in others.

Acute "toxic" encephalopathy is another condition about which there is much difference of opinion. The brain edema, the acute changes in the cortical neurones, the congestion of meningeal vessels and the slight hyperplasia of the adventitial and endothelial cells of small vessels sometimes called "productive encephalitis" are held by some writers to be responsible for the neurologic symptoms. Others maintain that they are artifacts or nonspecific reactions to fever, shock, anoxia and so forth. It is clear that there is no sign of inflammation and that in such transient and reversible neurologic syndromes as this one the expected pathophysiology will be subtle and difficult to demonstrate by present-day methods.

Clinical Aspects

Each of the types of encephalitis due to visible microbes can usually be recognized by the symptoms and laboratory findings of that particular disease. There should, for example, be no difficulty in distinguishing diseases as different as general paresis, trichinosis and subacute bacterial endocarditis. In these, as well as in neurotropic virus infections, involvement of the nervous system is indicated by the occurrence of general symptoms such as drowsiness, confusion, stupor or coma and of focal symptoms such as convulsions, hemiplegia, aphasia, ataxia, cranial-nerve palsies, tremor, chorea, athetosis and rigidity and by evidence of meningeal irritation — that is, headache and stiff neck. The cerebrospinal fluid usually contains an excess of cells, mostly lymphocytes, and increased amounts of protein with normal sugar and chloride levels.

The clinical syndromes produced by virus diseases of the brain, which have been reviewed recently by Rivers,[22] depend not on any peculiarity of the virus itself but on the location of the major pathologic changes. For instance, poliomyelitis differs from St. Louis encephalitis because of the presence of predominant spinal motor symptoms and a paucity of cerebral symptoms. In the differential diagnosis of virus diseases of the brain, reliance must be placed not only on the clinical picture but also on such epidemiologic features as the geographic location and season of the year, as well as on the coexistence of systemic symptoms and the presence of cerebrospinal-fluid abnormalities. Sometimes, even pathological examination will not suffice, and the diagnosis can be established only by special laboratory procedures such as isolation of the virus after embryonated egg inoculation,

the determination of the presence of neutralizing antibody or the demonstration of increasingly positive serologic reactions such as complement fixation and inhibition of erythrocyte agglutination.

In the New England states, during the past decade, there have been no verified cases of acute encephalitis lethargica; St. Louis encephalitis has not been reported in this area, and Eastern equine encephalitis has not occurred except possibly in isolated cases since 1938-1939. Japanese B, Australian X, Russian tick-borne and Western or Venezuelan encephalitis are unknown here. Mumps meningoencephalitis, infectious mononucleosis, poliomyelitis, herpes zoster, herpes simplex, rabies, lymphocytic choriomeningitis and lymphogranuloma venereum are the diseases that have been and will undoubtedly continue to be encountered in this section of the country.

Acute disseminated encephalomyelitis can usually be recognized without difficulty if there is knowledge of preceding measles, chicken pox, smallpox or other exanthem or of vaccination with either highly active viruses or attenuated ones. These diseases occur sporadically throughout the year, being more frequent whenever the exanthems are prevalent. It should be stressed that acute disseminated encephalomyelitis occasionally occurs before the rash becomes apparent, as in measles, and that in infants and children the encephalomyelitis may be so mild as to go undetected at the time of the acute exanthem only to become manifest years later when marked abnormalities in behavioral patterns appear.

Diseases suspected of being caused by filterable viruses, such as infectious mononucleosis, acute infectious hepatitis and acute infective polyneuritis, are apparently endemic in this region. We have seen a few cases with central-nervous-system involvement each year.

A brief summary of the clinical and laboratory findings of each of the types of encephalitis likely to be seen in the United States is presented below.

Encephalitis Lethargica

Although acute cases are not being seen in the United States, a considerable number of patients who exhibit the sequelae of this disease continue to visit the outpatient clinics of medical and neurologic services. The most common manifestations are tremor, rigidity and slowness of voluntary movements, which combine to form a clinical picture resembling in some ways the hepatolenticular degeneration of Wilson and, in others, paralysis agitans. Important differences that should be stressed are the absence of corneal pigmentation (Kaiser–Fleischer rings), of the mixed static and intentional tremor, and of the evidence of liver disease, which are common in Wilson's disease: and the presence of bizarre postures and gaits, and other muscular spasms such as oculogyric crises, and torticollis, of coarse tremors and behavioral peculiarities, which are rarely encountered in paralysis agitans. The disease follows a variable course, usually slowly progressive, and death results years later from a severe muscular rigidity, which immobilizes the patient and finally from intercurrent infection. The majority of these patients are afebrile, and the cerebrospinal fluid is normal. In other words, there is no indication of an infectious process during the chronic phases of the illness, and often no trace of an inflammatory reaction at autopsy. A unique feature of the disease is this progressive damage of the basal ganglions over a long period, often without manifest inflammatory activity at autopsy. The diagnosis is made entirely from the clinical features of the disease. There are no confirmative laboratory tests.

St. Louis Encephalitis

This disease differs from the von Economo type of encephalitis in its greater incidence in patients over the age of forty-five and in its prevalence during the summer months. The clinical picture shows tremendous variability because of the differences in severity of the infection and localization of the lesions in the brain and spinal cord. Three different syndromes have been described. The first consists of signs of meningeal irritation and increased intracranial pressure with difficulty in speech, ataxia, mental confusion and tremors of the tongue, lips or hands appearing abruptly without prodromal manifestations. Lethargy is not present in every patient. Paralyses are uncommon and are usually spastic in character. Eye-muscle involvement is extremely rare. The deep reflexes are usually exaggerated, and the abdominal ones are absent. Fever, usually disappearing within seven to ten days, may persist, in some cases, for from four to six weeks. The second is a syndrome characterized by prodromal manifestations of headache, generalized muscular pain, sore throat, mild conjunctivitis and photophobia that may last for from one to four days. After this period, the course of the disease is essentially the same as that in the first type. The third syndrome consists of so-called "abortive" cases of St. Louis encephalitis in which only fever and headache are present. These cases are usually detected because they occur in an area where this type of encephalitis is present, and lumbar puncture reveals spinal-fluid abnormalities.

The cerebrospinal fluid may be under normal or increased pressure; the protein is elevated, and the sugar normal, and there is an increase in the number of cells, which are chiefly lymphocytes, although other mononuclear elements may be present. No bacteria are demonstrable. Neutralization and the complement-fixation test aid in establishing the diagnosis.

The mortality in St. Louis encephalitis averages about 20 per cent, although it is much higher in the older and lower in the younger age group. When recovery occurs, there are usually no progressive sequelae as in lethargic encephalitis.

Equine Encephalitis

A Massachusetts epidemic of *equine encephalitis* in the autumn of 1938 coincided with an epidemic of this disease in horses in the southwestern part of the state. The disease may have been transmitted by mosquitoes, which were prevalent at that time. Children were affected more often than adults. The onset was usually quite abrupt, and the course rapidly progressive, death occurring within a few hours to a few days. The dominant symptoms were fever, headache, nausea and vomiting, rapidly developing stupor or coma, convulsions, hemiplegia and ocular paralyses. The cell count in the cerebrospinal fluid averaged up to 1500 per cubic millimeter, often with a preponderance of neutrophilic leukocytes. The pressure was raised, the protein values were elevated, and the sugar was normal. The mortality was high, and a few of the surviving patients have had permanent neurologic residua, such as mental enfeeblement and hemiplegia. The virus can be isolated from brain tissue in fatal cases by the intracerebral inoculation of mice. There are also specific neutralization and complement-fixation tests that can be carried out with serum of patients drawn during the acute and convalescent phases.

Acute Anterior Poliomyelitis

This disease is usually prominent in the summer and early autumn, although sporadic cases occur throughout the entire year. Prodromal symptoms such as headache, vomiting, diarrhea and upper respiratory manifestations, particularly sore throat, may be present for a few days. The invasion of the nervous system is marked by pain in the back and in the extremities, headache, stiff neck, rigidity of the spine and tenderness of nerves and muscles. A flaccid paralysis with loss of tendon reflexes but preservation of sensation develops a day or two later. Abortive types, nonparalytic meningeal forms and bulbar types have been described. Drowsiness and apathy are sometimes observed, but convulsions, coma and other cerebral symptoms of encephalitis are rare. Usually, the paralysis is asymmetrical, most often involving one leg or one arm, part of the trunk or both legs. Death is usually the result of involvement of the cardiac regulating or respiratory centers in the medulla, or both. In the first few days the cerebrospinal fluid usually contains 10 to 200 cells per cubic millimeter, both neutrophilic leukocytes and lymphocytes. The protein is often normal in the acute stages of the disease and gradually rises in succeeding weeks. As in all virus infections, the sugar and chloride are normal. Most workers believe that the virus is disseminated by human contact. The pathway of entrance is debated; there is considerable evidence that the virus passes through the wall of the gastrointestinal tract and reaches the spinal cord along sympathetic nerves. Another possibility is that it extends from the pharynx to the medulla and cervical part of the spinal cord. There is no quick laboratory test for confirmation of the diagnosis. Demonstration of the virus in the feces or the nasopharyngeal secretions is difficult, protracted and, at the moment, clinically impractical. Neutralization tests are unreliable because of antigenic differences between strains of virus; there is no serologic test of value. The diagnosis can be established at autopsy by the character and distribution of the lesions or, sometimes, by careful study of the clinical course of the disease.

Herpes Zoster

Herpes zoster is a specific infectious disease, probably caused by a virus, which has not yet been isolated. The disease begins with malaise, slight fever and pain along one or several nerve roots and is followed within three or four days by the characteristic vesicular eruption and local lymphadenopathy. Segmental sensory or motor paralysis, or both, may occur. When cranial ganglions are involved, several distinctive syndromes may occur: ophthalmoplegic zoster, affecting the Gasserian ganglion; geniculate zoster (Ramsay Hunt syndrome), affecting the geniculate or and probably more frequently the glossopharyngeal ganglions; and glossopharyngeal and vagus zoster, affecting the petrosal and jugular ganglions. In some cases the cerebrospinal fluid contains 5 to 200 cells per cubic millimeter, mostly lymphocytes, and an elevated total protein. Severe neuralgia and occasionally sensory loss or paralysis of a group of muscles are lasting complications. Cases of encephalitis as evidenced by increasing drowsiness, confusion and sphincter incontinence, myelitis with paraplegia and polyneuritis have been reported. The virus has never been isolated even from pathological material, and there are no reliable laboratory tests to prove its identity.

Mumps Meningoencephalitis

Symptoms of meningitis may develop before, during or after mumps. Swelling of the salivary glands may be slight and escape notice or may be entirely absent during the entire course of the disease. The infection may involve organs other than the salivary glands such as the testes, lacrimal glands, breasts and pancreas. Usually, the patients are not very sick. The onset of symptoms is marked by headache, occasionally by drowsiness and confusion, and in rare cases by convulsions and coma and cranial-nerve palsies, particularly the seventh and eighth nerves. Signs of meningeal irritation are prominent.

Lymphocytic Choriomeningitis

This is a benign meningitis that is often preceded by one or two weeks by systemic symptoms not unlike influenza. The onset of meningeal involvement is announced by headache and stiff neck and sometimes drowsiness, irritability and confusion. In a few cases, focal cerebral symptoms have occurred. The cerebrospinal fluid is under normal or increased pressure and contains 50 to 1500 cells per cubic millimeter, mostly lymphocytes. Sugar and chloride values are normal. Usually, recovery occurs in two or three weeks, and only a few fatal cases have been reported. The virus can be obtained from both the blood and cerebrospinal fluid. It has also been found in wild mice and rodents around human dwellings. The feces or the bite of the rodents is the source of human infections. This disease must be distinguished from tuberculous meningitis and mumps meningoencephalitis. Neutralization and complement-fixation tests are helpful in establishing the diagnosis (Farmer and Janeway[23]).

Infectious Mononucleosis

Infectious mononucleosis or glandular fever is a pleomorphic disease that is occasionally accompanied by headaches, stiff neck, giddiness, nausea and vomiting. Its more specific nervous manifestations include delirium, lethargy, stupor and diplopia. The cerebrospinal fluid, which contains an excess of cells, up to several hundred lymphocytes and other mononuclear elements and an elevated total protein, attests to a meningitis and more specific nervous symptoms such as delirium, coma and diplopia to parenchymatous damage. In a few exceptional cases an ascending polyneuritis indistinguishable from the usual acute infectious or acute febrile polyneuritis has developed, being preceded or followed by jaundice. The diagnosis rests on the demonstration of abnormal lymphocytes in the circulating blood, enlargement of lymph nodes generally and often of the spleen and liver, and the presence in the serum of heterophil-antibody agglutinins for sheep erythrocytes. Since the causative agent has not been isolated, the viral etiology can only be predicated from the nature of the pathologic findings.

Herpes Simplex Encephalitis and Myelitis

Several cases of encephalitis with large Type A intranuclear inclusion bodies in nerve and glial cells have been reported in the past two decades.[24–26] In at least 2 of these the virus of fever blisters or acute stomatopharyngitis has been isolated and shown by rising titers of neutralizing antibodies to have been the causative agent. It is reasonable to suppose that all the reported cases in which these intranuclear inclusion bodies were demonstrated are due to this virus.

Most of the cases have occurred in children. The onset is insidious. Alteration of character, impaired vision, ataxia, hemiparesis, disturbances of movement and posture in the form of rigidity, athetosis or dystonia, facial spasm, trismus and finally coma are listed as the distinctive features of the disease. The course is subacute, with progression to a fatal termination in one to four months. Except for a few lymphocytes in some cases the cerebrospinal fluid has been normal.

Because of the common symbiosis between this virus and man, the etiology of these cases is difficult to prove. Some antibody to this virus is present in a great number of healthy persons, and hence only with rising and falling titers with reference to a particular illness can this agent be implicated.

The fatal case of ascending myelitis in a laboratory technician after the bite of a supposedly healthy monkey that was reported by Sabin and Wright[27] has excited much controversy. He believed that this virus differed from that of herpes simplex, but other workers have since stated that it belongs to the same group.

Rabies

This is an old and, from the historical point of view, important neurotropic virus infection that still exists in this country. The virus is present in many lower animals besides dogs, such as foxes, coyotes, wolves, skunks and vampire bats, and is transmitted to human beings through the bites of rabid animals. The incubation period is twenty to sixty days. The first symptoms are pain and numbness in or near the bite. Within a few days, restlessness, irritability and excitement alternating with drowsiness appear. Headache, stiff neck and rigidity of the spine are usually present. Violent convulsions, involuntary movements and characteristic spasm of the pharynx and larynx occur and have been interpreted by laymen as hydrophobia. Coma develops later. Death is inevitable once symptoms of rabies appear, but the use of antirabies vaccine early in the incubation period is of prophylactic value. A clinical picture of ascending myelitis, so-called "dumb" rabies or "Trinidad rabies" has been described.[17] There is no laboratory test to aid in the diagnosis during life. The finding of cytoplasmic inclusion bodies (Negri bodies) in the nerve cells of the Gasserian ganglions, the hippocampal gyrus or Purkinje cells of the rabid animal or infected man will establish the diagnosis. The virus is not found in the blood or spinal fluid of man.

Lymphogranuloma Venereum

The viral origin of this disease is now accepted, and a few cases of so-called meningoencephalitis have been reported. The symptoms are fever, headache, stiff neck, mental confusion and an occasional cranial-nerve palsy. The cerebrospinal fluid con-

tains several hundred to a thousand or more cells, of which the majority are lymphocytes. The sugar level is usually normal though a few values below 40 mg. per 100 cc. were found twice in 19 lumbar punctures in 1 case.[28] The protein is elevated and the colloidal-gold readings are abnormal. Characteristic genital or rectal lesions should suggest the possibility of lymphogranuloma venereum and a positive Frei test is confirmatory; this reaction may, however, be negative. The virus can be isolated from the cerebrospinal fluid by the intranasal or intracerebral inoculation of mice, and from the genital lesion or regional lymph nodes but not the blood stream. Complement fixation is an accepted diagnostic procedure. Although usually benign, this disease may occasionally run a rapidly fatal course.[29, 30]

Encephalitides of Unknown Origin

Among the encephalitides of unknown origin, some, like those following rubeola and rubella, are related to known virus infections, but the causative agents have not been isolated from nervous tissue and the pathological picture does not resemble that of a virus disease. Although it has been postulated that the neurologic disturbance is due to the activation of a latent virus, concrete evidence to support this viewpoint has not been advanced. Recently, data suggesting an allergic reaction to nervous tissue during the course of the exanthem as the etiologic factor concerned in post-infectious encephalomyelitis have been presented.[31–34] The causative factors concerned in the other encephalitides — acute hemorrhagic, those complicating scarlet fever and rheumatic fever and the "toxic" type — are completely unknown.

Acute Disseminated Encephalomyelitis

This accompanies measles more often than any other infection and occurs in from 1:400 to 1:1000 cases of this exanthematous disease. It has also been reported after rubella, varicella, variola and mumps. It occasionally appears without any recognizable exanthem. Usually, the neurologic symptoms occur four to six days after the onset of the skin eruption and are accompanied by a rise of temperature and pleocytosis of the cerebrospinal fluid. The neural manifestations may be those of diffuse cerebral involvement, — that is, confusion, convulsions and coma, — focal brain lesions (hemiplegia, hemianesthesia, aphasia, blindness or hemianopia), brain-stem involvement with cranial-nerve palsies or pseudobulbar palsy and cerebellar or spinal lesions such as ataxia and paraplegia. Although 10 to 20 per cent of patients die and there may be serious residua in as high as 65 per cent of the cases, a surprising degree of recovery often occurs. A similar clinical picture may develop a week to ten days after the beginning of antirabies vaccination, the administration of smallpox vaccine or rarely the injection of horse serum in the prophylaxis of tetanus or treatment of diphtheria. The pathology has been described above. There are no laboratory tests of any value, but in fatal cases the diagnosis can be confirmed by the characteristic anatomic lesions, a history of contact with one of the infections listed above and the clinical course of the disease.

Acute Hemorrhagic Encephalitis

We have studied the brain in 10 fatal cases, 3 of which were examined during life. The correct diagnosis was not made in any case, though it was mentioned in the differential diagnosis in 1. After an upper respiratory infection or during an influenzal-like illness, fever, deep confusion, coma, convulsions and hemiplegia or quadriplegia appeared without assignable cause. The cerebrospinal fluid was normal in the cases of brain purpura and contained several hundred cells, mostly neutrophilic leukocytes, elevated protein, normal sugar and chloride in the cases of acute hemorrhagic necrotizing encephalopathy. The prominence of neurologic symptoms always raises the question of an encephalopathy due to a toxin, metastatic infection or a vascular lesion of the brain. No virus has been isolated from these cases. At present the diagnosis can only be confirmed by autopsy.

Encephalitis of Scarlet Fever and Rheumatic Fever

In exceptional cases of recurrent rheumatic fever, scarlet fever and possibly other of the so-called rheumatic diseases, persistent fever and pleocytosis of the cerebrospinal fluid are accompanied by neurologic symptoms. A confusional psychosis sometimes with paranoid coloring, delirium, ataxia of limbs, reflex changes, stupor or coma has constituted the clinical picture in some cases, but other patients have had relatively few complaints or signs referable to the nervous system. In the cases of scarlet fever the signs of meningeal irritation and the pleocytosis of the cerebrospinal fluid, which usually consists of 100 to 200 lymphocytes per cubic millimeter, occur when the rash is desquamating.[35, 36] The symptoms do not respond to sulfonamide drugs or antistreptococcus serum, and penicillin has not been given sufficient trial. It is not yet certain whether the neurologic sequelae are due to a streptococcal septicemia and an interstitial encephalitis similar to that found by Mallory and Keefer[37] in other viscera or whether the brain lesions are the result of embolism secondary to endocarditis — that is, focal embolic encephalomyelitis.[38] The unsettled state of rheumatic encephalitis was mentioned above.

Acute "Toxic" Encephalopathy

In many acute and severe infectious diseases such as pneumonia, influenza, diphtheria, pertussis, septicemia, scarlet fever, dysentery and typhoid fever, stiffness of the neck and spine, convulsions

and stupor or coma may occur. This is especially true in children, when the neurologic disorder at times even obscures the signs of the primary pathologic process. The cervical rigidity is often so pronounced as to suggest the presence of meningitis, particularly when there is pneumonia of the right be controlled death frequently occurs, or if the child survives, serious and permanent brain damage may follow. The syndrome is nonspecific; it varies little regardless of the associated disease. The diagnosis is made on purely clinical grounds. The condition must be distinguished from intracranial

TABLE 1. *Laboratory Diagnosis of Virus Diseases of the Nervous System.*

DISEASE	PRESENCE OF VIRUS			METHOD OF DEMONSTRATING PRESENCE OF VIRUS	NEUTRALIZATION TEST	COMPLEMENT-FIXATION TEST	OTHER TESTS	PATHOLOGICAL FEATURES
	BLOOD	CEREBROSPINAL FLUID	BRAIN AND SPINAL CORD					
Rabies	0	0	+	Intracerebral inoculation in mice	0	?	—	Typical virus encephalomyelitis — that is, nerve-cell destruction, microglial proliferation, lymphocytic infiltration of meninges and perivascular spaces and Negri bodies
Poliomyelitis	0	0	+	Inoculation of spinal-cord suspensions, stool emulsions or throat washings, after filtration, intracerebrally, subcutaneously or intranasally into monkeys	+	0	—	Typical virus encephalomyelitis with predominance of lesions in spinal cord, brain stem and motor cortex
St. Louis encephalitis	0	0	+	Inoculation into mice intracerebrally or in embryonated egg	+	+	—	Typical virus encephalomyelitis; lesions in cerebral cortex, basal ganglions and brain stem; focal areas of necrosis.
Western equine encephalitis	0	0	+	Intracerebral inoculation in mice	+	+	—	Same as those of St. Louis encephalitis
Eastern equine encephalitis	+	+	+	Intracerebral inoculation in mice	+	+	—	Same as those of St. Louis and Western encephalitis
Mumps meningoencephalitis	+	+	+	Inoculation of embryonated egg	+	+	Fowl red-cell agglutinin inhibition	Meningitis — perivascular and meningeal infiltrations of lymphocytes and other mononuclear cells
Lymphogranuloma venereum	+	0	+	Inoculation of embryonated egg	+	+	Frei test	Same as those of mumps
Herpes simplex	?	?	+	Scarification of rabbit cornea; ? growth on embryonated egg; intracerebral inoculation in mice.	+	Not reliable	—	Intranuclear inclusion bodies; otherwise similar to St. Louis and equine encephalitis.
Herpes zoster	0	0	0	None	0	0	—	Destruction of 2 or 3 sensory ganglions; lymphocytic infiltration of ganglions, nerve roots, meninges and unilateral segmental poliomyelitis; vesicles in skin with intranuclear inclusions.
Encephalitis lethargica	0	0	0	None	0	0	—	Typical virus encephalomyelitis; lesions chiefly in globus pallidus, midbrain and pons; less tissue necrosis than in St. Louis and equine encephalitis.
Infectious mononucleosis	0	0	0	None	0	0	Heterophil antibody; sheep red-cell agglutinin	Infiltration of peripheral nerves, sensory ganglions, sensory roots and sometimes meninges with lymphocytes, plasma cells and histiocytes
Benign lymphocytic choriomeningitis	+	+	+	Culture on embryonated egg; inoculation in mice, guinea pigs and monkeys.	+	+	0	Meningitis; perivascular and meningeal infiltration with lymphocytes, macrophages and a few neutrophilic leukocytes.

upper lobe. However, the cerebrospinal fluid is within normal limits. The course is variable. If the convulsions are suppressed and the infection promptly controlled, consciousness may be regained within a few hours and the rigidity may disappear, leaving no sequelae or only transient and reversible focal neurologic symptoms. If the infection cannot suppurative processes and other types of encephalitis.

LABORATORY DIAGNOSIS OF ENCEPHALITIS

Correct diagnosis of neurotropic virus infections requires the aid of special laboratory tests. Cheever[39] has written an excellent review of the

general methods used in the laboratory diagnosis of viral diseases. These tests are complex and expensive and are being done in only a few large medical centers. The laboratories that have been most generous in their help are those of the Rockefeller Institute, the National Institute of Health, the Children's Hospital in Philadelphia and the Diagnostic Laboratories of the Massachusetts Department of Public Health, which limits its efforts to the diagnosis of mumps and influenza virus infections. If material is submitted to these laboratories in suitable form, appropriate tests will be done, and the results reported promptly.

In all the established virus diseases the causative agent can be obtained from the spinal cord and brain. However, only in lymphocytic choriomeningitis is the virus found consistently in the blood and cerebrospinal fluid in sufficient concentration to make such tests worth while. In all the virus diseases of known etiology, with the exception of rabies, poliomyelitis and herpes simplex, complement-fixation or neutralization tests are now available and are of diagnostic value. If positive, these tests show only that the patient has at some previous date had this infection. To prove that a specific illness was caused by the virus in question two samples of blood serum, one taken as early in the disease as possible and the other late in convalescence (usually six weeks) should be submitted. If the first specimen contains no antibody or only a low titer and the second one shows a rise in antibody content the evidence is strong that the suspected disease was due to the virus in question.

Aseptic precautions should be taken in the collection of blood. The serum should be removed from clot as soon as possible, frozen and kept at very low temperatures if immediate examination cannot be done. Brain, preferably pieces from the hippocampal convolution, sensorimotor cortex and pons, or spinal-cord tissue should be frozen in a mixture of alcohol and dry ice under sterile conditions or put in a 50 per cent solution of neutral glycerin. The diagnostic tests useful in establishing the viral origin in a case of encephalitis are presented in Table 1.

Summary

Aside from the forms of encephalitis due to visible microbes such as bacteria, parasites, rickettsias and spirochetes, the class of inflammatory brain diseases caused by filterable viruses has been seen rarely in New England during the past few years. In fact, the only neurotropic viruses that we have encountered are mumps, poliomyelitis, lymphocytic choriomeningitis, herpes zoster and rabies. Acute disseminated or postinfectious encephalomyelitis, which is probably not of direct viral etiology, occurs sporadically after exanthematous disease and certain immunization procedures. In the last six years there have been 15 cases diagnosed during life as virus encephalitis that underwent pathological examination at the Mallory Institute of Pathology. The final anatomic diagnoses were acute confusional psychosis (2 cases), metabolic disease with disturbed brain function (1 case), lead encephalopathy (1 case), focal embolic encephalomyelitis due to subacute bacterial endocarditis (4 cases), acute disseminated lupus erythematosus (1 case), tuberculous meningitis (3 cases), torulosis of the meninges (1 case), basilar-artery thrombosis (1 case) and brain abscess (1 case). From these pathological data one must conclude that a diagnosis of virus encephalitis in New England has at the present time a large probability of error. It is recommended that the word encephalitis not be used without a qualifying adjective. Thus, the neurologic syndrome in question should be analyzed to determine whether or not it is consistent with encephalitis lethargica, mumps, postinfectious encephalomyelitis and so forth. Admittedly, the neurologic symptoms of the different types of encephalitis are not by themselves distinctive, but by habitually thinking in terms of specific disease entities and taking into account epidemiologic and laboratory data one can avoid serious diagnostic errors.

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MASSACHUSETTS MEDICAL SOCIETY

PROCEEDINGS OF THE COUNCIL

Stated Meeting, October 6, 1948

A STATED meeting of the Council was called to order by the president, Dr. Daniel B. Reardon, Norfolk South, on Wednesday, October 6, 1948, at 10:30 a.m. in John Ware Hall, 8 Fenway, Boston.

Two hundred and fifteen councilors (Appendix No. 1) were present.

The Secretary presented the record of the May 24, 1948, annual meeting of the Council as published in the *New England Journal of Medicine*, issue of July 22, 1948, and moved its acceptance. The motion was seconded and it was so ordered by vote of the Council.

Appointments

The President then announced the following appointments all of which had been presented to the Executive Committee, with the exception of the Subcommittee on Medical Education:

To the Subcommittee of the Executive Committee on Blue Cross-Blue Shield Problems:
Dr. Charles J. E. Kickham, *Chairman*
Dr. Joseph C. Merriam
Dr. Harvey A. Kelly
Dr. John Fallon
Dr. Paul M. Butterfield

To the Temporary Committee on Council Rules and By-laws:
Dr. Edward P. Bagg, *Chairman*
Dr. Elmer S. Bagnall
Dr. Frank R. Ober
Dr. Albert A. Hornor

To the Committee on Medical Economics:
Dr. Henry A. Robinson

To the Committee on Society Headquarters:
Dr. Dwight O'Hara

To the Committee on Tax-Supported Medical Care:
Dr. Francis P. McCarthy

To the Advisory Subcommittee on Medical Education:
Dr. Arthur Jankelson, *Chairman*
Dr. George E. Gardner
Dr. Raymond H. Goodale
Dr. Donald A. Nickerson
Dr. William A. Hinton
Dr. C. Guy Lane
Dr. Augustus Thorndike

The President asked for approval of these appointments, and it was so ordered by vote of the Council.

The Secretary, on behalf of the Society, presented the President with a gavel with his name and the years 1948–1949 engraved upon it. The President accepted the gavel with thanks and said that he heartily approved of establishing the custom of presenting a gavel to each newly elected President.

Reports of Committees

Executive Committee — Dr. H. Quimby Gallupe, Middlesex South, *Secretary*.

The Secretary presented the minutes of the meeting of the Executive Committee held on September 8, 1948, as mimeographed (Appendix No. 2) and mailed to the Councilors and moved their acceptance. The motion was seconded, and it was so ordered by vote of the Council.

The Secretary then stated that under the matters referred to the Committee by the Council, (1) the question of whether or not the Society should receive certain gifts, the committee had voted to defer action until the Treasurer received further information from the American Medical Association and the Treasury Department. (2) The Executive Committee unanimously approved of making the Committee on Postgraduate Assembly a sub-

committee of the Committee on Postgraduate Medical Education. The Secretary moved that the Council approve this recommendation. The motion was seconded, and it was so ordered by vote of the Council. (3) The Executive Committee unanimously approved the proposal to have the Society sponsor the art exhibit of the Massachusetts Physicians Art Association at the annual meetings. The Secretary moved that the Council approve this recommendation. The motion was seconded, and it was so ordered by vote of the Council. (4) The Executive Committee unanimously voted to approve of the establishment of a Section on Physiology and Pathology. The Secretary moved that the Council approve the establishment of such a section. The motion was seconded, and it was so ordered by vote of the Council. (5) The Executive Committee voted unanimously to approve the request of Dr. Augustus Thorndike to have the President appoint a committee to confer with the directors of the Bay State Medical Rehabilitation Clinic, a charitable, nonprofit clinic not connected with the state or federal governments.

The Secretary moved that the request be approved by the Council. The motion was seconded, and it was so ordered by vote of the Council.

The President then made the following appointments to that committee and asked for the approval of the Council. On a motion duly made and seconded it was so voted.

To the Committee to meet with the Officers of the Bay State Medical Rehabilitation Center:
Dr. Charles H. Bradford, *Chairman*
Dr. W. Irving Clark
Dr. Walter Bauer
Dr. Joseph S. Barr
Dr. Hermann L. Blumgart
Dr. Otto J. Hermann
Dr. Arthur L. Watkins

(6) The Executive Committee voted unanimously not to approve the recommendations of the now extinct Committee on Medico-Legal Testimony to amend the By-laws in order to establish a standing committee on Medico-Legal Testimony. The Secretary moved that the Council approve this action of the Executive Committee. The motion was seconded, and it was so ordered by unanimous vote of the Council.

The Secretary then moved that the report of the Committee on Membership as distributed to the Executive Committee concerning transfers, retirements, deprivations and resignations be approved by the Council. The motion was seconded, and it was so ordered by vote of the Council.

The Secretary then stated that new business before the Executive Committee included the following:

(1) The resolution presented to it by the Hampden District Society was discussed, and the committee voted that the matter of the resolution be laid on the table until the next meeting of the Committee.

(2) The committee voted unanimously to approve the request to change the name of the Section on Physiotherapy to Section on Physical Medicine. The Secretary moved that the Council approve of this change in name. The motion was seconded, and it was so ordered by vote of the Council.

(3) The Secretary stated that the Executive Committee had given him permission to confer with the secretaries of the district societies in order to select candidates for the General Practitioners Award; the Executive Committee would select one candidate for presentation to the Council. The Secretary moved that the Council approve this action by the Executive Committee. The motion was seconded. Dr. Carl Bearse, Norfolk, moved that the motion be amended to the effect that unless a candidate receive a majority vote of the Executive Committee the decision be referred to the Council for action. (There was no second to this motion.) The President called for a vote on the original motion, and it was so ordered by a vote of the Council.

(4) The Secretary stated that the Executive Committee had approved the action of the President in acceding to the request of our counsel, Mr. Twomey, to submit a brief as a friend of the court. The President then explained that the matter concerned one of our fellows who had been sued by a patient because she claimed morphine addiction as a result of his treatment. The Court had found for the plaintiff, and the judge had upset the verdict. The case was to be tried in the Supreme Court.

On motion made by the Secretary and duly seconded, the Council voted to approve the action of the Executive Committee in this respect.

The President said that he would interrupt the usual procedure at this point to permit Dr. James C. McCann, Worcester, to report to the Council on the affairs of Blue Shield. Dr. McCann thanked the President and addressed the Council (Appendix No. 3).

Dr. Reardon thanked Dr. McCann for his report and called for the Committee Reports.

Committee on Cancer — Dr. Shields Warren, Suffolk, *Chairman.*

Since no member of the Committee on Cancer was present, the Secretary moved acceptance of the report (Appendix No. 4). The motion was seconded, and it was so ordered by vote of the Council.

Dr. George Papen, Norfolk, stated that at a pre-Council meeting of the Norfolk District Medical Society it had been voted that the recommendations of the Committee on Cancer — "That the Massachusetts Medical Society endorse the principle of voluntary registration of cancer cases" — be tabled

until the Committee on Cancer develops and presents a system for consideration to the Council.

Dr. Papen moved that the recommendation of the committee be tabled. The motion was seconded. On a voice vote, the President declared the motion carried.

The Secretary then stated that he was sorry that none of the committee were present, and that it was his duty to move that the second recommendation of the Committee on Cancer — "that the Committee on Publications be encouraged to prepare a revised edition of the Cancer Manual" — be approved by the Council. The motion was seconded, put to vote and unanimously carried.

(At this time there was much discussion concerning the motion to table made by Dr. Papen, but the President finally ruled that any discussion was out of order.)

Committee on Tax-Supported Medical Care — Dr. Albert A. Hornor, Suffolk, *Chairman.*

Dr. Hornor presented the report (Appendix No. 5) and made the following remarks:

> Mr. President, before speaking about the recommendations of the Committee on Tax-Supported Medical Care, I would like to remind you that the Executive Committee voted not to accept the report of the Committee. I do, however, want to have the report of the Committee approved and its recommendations adopted.
>
> As a result of the meeting of the Committee on Tax-Supported Medical Care on July 28, 1948, the following recommendation was made to the Council: that the Council of the Massachusetts Medical Society approve "Medical Care Program — Policies and Procedures, from the Office of Veterans' Services, Room 123, State House, Boston, Massachusetts, effective July 15, 1948," with the inclusion of the amendment to which Commissioner O'Day has agreed as follows: "You may rest assured that after your Massachusetts Medical Society meets and approves the program, I will be pleased to notify all of my agents throughout the Commonwealth of the action, and that this approval is effective subject to renegotiation."
>
> I think that no member of your committee would have recommended acceptance of Mr. O'Day's program without that agreement to renegotiation. Several have worked on this question of tax-supported medical care for a long time, and we all know that the people down at the State House have a fixed fee for all cases throughout the State.
>
> That very definitely has to be there. I don't see how they can operate otherwise. I think, and in fact I am aware, that the Council has voted that we do not want to cut our fees for tax-supported medical care.
>
> Now, after all, the commissioner and his associates are willing to renegotiate any time we wish. And I think that as a part of acceptance of the Committee on Tax-Supported Medical Care it would be worth while for the Council to tell us how they would like us to renegotiate it, and how long they would like to have us try this program before we ask for renegotiation.
>
> Mr. President, I move the adoption of the recommendation of the Committee on Tax-Supported Medical Care.

The motion was seconded. At the request of Dr. Elmer S. Bagnall, Essex North, Dr. Hornor said that the salient features were contained in an interdepartmental letter from the Office of the Commissioner of Veterans' Services of the Commonwealth, as follows:

> To all Veterans Agents:
>
> Enclosed herewith is a copy of our new program of Medical-Dental care. The program is effective as of July 15, 1948.
>
> The co-operation of all agents is urgently requested to see that this policy is carried out to the fullest degree. This program has been submitted to the Massachusetts Medical Society for approval.

Dr. Bagnall then stated that it was his feeling that the whole matter should be referred back to the committee for further study of the legislation concerning veterans' medical care and old-age services. After some further discussion, Dr. Alexander J. A. Campbell, Suffolk, moved that the whole question be laid on the table, and that a full report of the committee including the veterans' services program (Appendix No. 6) be published in the *New England Journal of Medicine.* The motion was seconded, and it was so ordered by vote of the Council.

Advisory Committee to the Red Cross Blood Bank — Dr. John F. Conlin, Suffolk, *Chairman.*

At the request of Dr. Conlin, the Secretary moved that the Council approve the report (Appendix No. 7). The motion was seconded, and it was so ordered by unanimous vote of the Council.

Committee on Veterans' Affairs — Dr. Harvey A. Kelly, Suffolk, *Chairman.*

Dr. Kelly moved that the report (Appendix No. 8) be accepted. The motion was seconded, and it was so ordered by vote of the Council.

Dr. Kelly then moved the adoption of the resolution with a change in the wording of the second paragraph as follows: "Whereas many European schools are not approved by most accredited approving bodies in the United States."

The motion was seconded and passed by a unanimous vote of the Council.

Committee on Public Relations — Dr. Harold R. Kurth, Essex North, *Secretary.*

Dr. Kurth presented the report (Appendix No. 9).

The Secretary then made the motion that the committee recommendation that the Massachusetts Medical Society initiate a public-health exhibit and that the President be empowered to appoint a committee consisting of a representative from each district to initiate such a program immediately be approved.

The motion was seconded, and it was so ordered by a unanimous vote.

The Secretary then moved that the recommendation to establish a student loan fund (which had been disapproved by the Executive Committee) be disapproved by the Council. The motion was seconded, and it was so ordered by a unanimous vote.

The Secretary moved that the recommendation to conduct a state-wide health meeting and that the Council appropriate the sum of $500 toward this important activity be approved. The motion was seconded, and it was so ordered by vote of the Council.

The President then stated that the Executive Committee did not approve of the recommendation to endorse an ascending scale of membership dues and the study of the question by a proper committee.

The Secretary moved that the Council, also, not approve of this recommendation. The motion was seconded.

Dr. Eliot Hubbard, Jr., Middlesex South, said that he had objected because the issues had not been clearly defined, but that he would not object to having a committee study the whole question.

Dr. Richard M. Smith, Suffolk, then made a motion that the recommendation of the Committee on Public Relations be amended to read: "The Committee recorded itself as endorsing in principle such an ascending scale of membership dues and urges that this matter be referred to a proper committee for study." The motion to amend was seconded, put to a vote and carried.

Dr. Lewis S. Pilcher, Middlesex South, said that the question was already before the Committee on Membership for study and moved to table the original motion. The President called for a vote on the motion to table and, on a show of hands, declared the motion carried.

The Secretary then moved that the recommendation of the Committee concerning awards to students in the approved medical schools of the Commonwealth be approved by the Council and stated that the committee proposed to study the question and to determine the proper means to select the recipients by the Committee on Medical Education. The motion was seconded, and it was so ordered by vote of the Council.

Committee on Arrangements — Dr. Harold G. Giddings, Middlesex South, *Chairman.*

Dr. Giddings presented the report of the committee, as follows:

> At the stated meeting of the Council on October 1, 1947, it was voted to accept the cordial invitation of the Worcester District Society to hold the 1949 Annual Meeting of the Massachusetts Medical Society in Worcester.
>
> This will be the first time since 1939 that the Society has met elsewhere than in Boston.
>
> A committee of the Worcester District Medical Society, of which Dr. George R. Dunlop is chairman, is working in close co-operation with the Committee on Arrangements, and plans are already well under way for the meeting, which we recommend be held at Worcester, on May 23, 24, 25 and 26, 1949.

Dr. Giddings moved that the report be accepted. The motion was seconded and carried.

Dr. Giddings moved that the recommendation concerning time and place of the next annual meeting be approved. The motion was seconded and so voted.

Committee on Public Health — Dr. Roy J. Ward, Worcester, *Chairman.*

Dr. Ward pointed out as a correction that the date of the committee meeting should read "June 5" and not "July 21."

The Secretary then moved that the report and the supplementary report (Appendix No. 10) be accepted. The motion was seconded, and it was so ordered by vote of the Council. The President asked that the request of the committee to have Dr. Howard B. Sprague explain the heart demonstration program be approved. On a voice vote, the Council granted this request.

The President introduced Dr. Sprague, who in turn introduced Dr. David D. Rutstein. Dr. Rutstein, in reply to a question by Dr. John F. Conlin regarding whether speakers in the program should be selected on the basis of a ratio of 1 prominent speaker to 1 or 2 less well known speakers, agreed that this method of selection was desirable. In reply to a question from a councilor regarding the charge of $10,000 for medical education listed in the budget of the heart demonstration program, he stated that the amount referred to was for work in co-operation with the New England Heart Association and the Massachusetts Medical Society, as well as for the education of nurses, teachers and other groups concerned with the problem.

The President then asked for action on the recommendation of the committee appearing in the report as follows:

> The Committee approved Dr. Phippen's resolution and a motion was made and adopted that we recommend to the President of the Massachusetts Medical Society that a committee be appointed to expedite the Massachusetts "Diabetes Week" program from December 6 to 12, 1948; that this committee be empowered to act; and that its efforts be co-ordinated with Dr. Ohler's Committee on Postgraduate Education. It was also moved and adopted that the Council take necessary action relative to the final paragraph of Dr. Phippen's resolution.

The Secretary made a motion that the Council approve this recommendation. The motion was seconded, and it was so ordered by vote of the Council.

Committee on Benevolence — Dr. Dwight O'Hara, Middlesex South, *Chairman.*

Dr. O'Hara presented the report of the Committee (Appendix No. 11) and moved the adoption of the proposal of the committee. The motion was seconded, put to a vote and carried.

Dr. O'Hara then moved that the recommendation that a temporary committee on benevolence be appointed to operate until such time as the by-laws may be amended to authorize such an arrangement be approved.

The motion was seconded, and it was so ordered by vote of the Council.

Dr. O'Hara moved acceptance of the report as a whole. The motion was seconded and carried.

Dr. O'Hara, in answer to several questions, outlined the organization and functions of the Massachusetts Medical Benevolent Society and assured the Council that the fund would be an active one.

Report of the Delegates to the House of Delegates of the American Medical Association — Dr. Walter G. Phippen, Essex South.

Dr. Phippen moved for acceptance of the report as printed (Appendix No. 12). The motion was seconded, put to vote and carried.

Subcommittee on Mental Health — Dr. Walter E. Barton, Norfolk, *Chairman.*

Dr. Barton moved for acceptance of the report (Appendix No. 13). The motion was seconded, and it was so ordered by vote of the Council.

The Secretary then moved that the reports of the Executive Committee and the Committee on Public Relations as amended at this meeting be approved. The motion was seconded and so voted.

New Business

The President introduced Dr. Henry A. Robinson, Norfolk South, who had attended the meeting of the National Physicians Committee as a representative of the Massachusetts Medical Society. Dr. Robinson said that he and Dr. Howard F. Root, Suffolk, the other representative, had been very favorably impressed with the work of the National Physicians Committee and that they would be glad to hear from any fellow interested in forming a state committee of the National Physicians Committee.

Dr. William A. R. Chapin, Hampden, was recognized by the President and presented the following resolution, which had been passed by the New York State Medical Society and had been published in the *Journal of the American Medical Association*, issue of July 3, 1948: "RESOLVED, That, failing to obtain co-operation from the various Specialty Boards and hospitals, the American Medical Association is requested to withhold recognition from those hospitals which make certification by a Specialty Board a necessary qualification for appointment or promotion on a hospital staff."

Dr. David L. Halbersleben, Norfolk, moved that the rules be suspended for consideration and discussion of the matter. The motion was seconded, and it was so ordered by unanimous vote.

At the request of Dr. Chapin, the President ruled that Dr. Chapin would get both discussion and action on the question.

At this point, the President called for a recess until 2:00 p.m.

The President called the Council to order at 2:00 p.m. and recognized Dr. William Chapin.

Dr. Chapin presented his arguments in favor of the resolution he had presented and moved that the Council endorse in principle the resolution as presented. The motion was seconded.

Dr. Leroy E. Parkins, Suffolk, moved that the Council go into Executive Session. The motion was seconded, and it was so ordered by a unanimous vote.

The motion was then discussed by Dr. Bernard Appel, Essex South, Dr. Parkins, Dr. Howard Root, Suffolk, and Dr. Lewis S. Pilcher, Middlesex South, in opposition; and Dr. David L. Halbersleben, Norfolk, and Dr. Carl Bearse, Norfolk, in favor.

The President stated the question and called for a vote by a show of hands, and announced the vote as 37 affirmative, 30 negative.

The President recognized Dr. John F. Conlin, Suffolk, who described the program of the New England Postgraduate Assembly and urged that there be a large attendance.

Dr. Conlin also announced that the American Public Health Association would meet in Boston on November 8, 1948, and stated that all physicians are eligible for membership. He hoped that many would attend the meetings and the exhibits.

On motion duly made, seconded and voted, the meeting adjourned at 3:00 p.m.

H. Quimby Gallupe, *Secretary*

APPENDIX NO. 1

Attendance of Councilors

Berkshire
P. J. Sullivan

Bristol North
M. E. Johnson
J. L. Murphy
W. M. Stobbs

Bristol South
R. B. Butler
D. F. Gallery
E. D. Gardner
R. H. Goodwin
William Mason
H. E. Perry
A. J. Pothier
C. C. Tripp

Essex North
E. S. Bagnall
R. E. Blais
J. A. Bradley
N. F. DeCesare
A. P. George
H. R. Kurth
P. J. Look
R. C. Norris
L. C. Peirce
F. W. Snow
L. T. Stokes
F. N. Sweetsir
C. F. Warren
C. A. Weiss

Essex South
Bernard Appel
S. N. Gardner
Loring Grimes
P. P. Johnson
R. T. Moulton
E. L. Peirson
W. G. Phippen
E. D. Reynolds
H. D. Stebbins
P. E. Tivnan
C. F. Twomey
R. J. Williams

Franklin
L. R. Dame

Hampden
E. P. Bagg
W. A. R. Chapin
G. B. Corcoran
Adolph Franz, Jr.
P. E. Gear
A. H. Riordan
G. L. Schadt

Hampshire
R. S. Clapp

Middlesex East
J. L. Anderson
Robert Dutton
R. W. Layton
K. L. Maclachlan
H. L. Mueller
M. J. Quinn
R. R. Stratton

MIDDLESEX NORTH
W. M. Collins
S. A. Dibbins
L. J. Hall
J. Y. Rodger
J. D. Sweeney

MIDDLESEX SOUTH
J. M. Baty
H. K. Bloom
G. F. H. Bowers
Madelaine R. Brown
R. N. Brown
R. W. Buck
E. J. Butler
J. F. Casey
C. W. Clark
E. A. Cooney
Oliver Cope
W. H. Crosby
J. A. Daley
J. G. Downing
A. G. Engelbach
C. W. Finnerty
H. Q. Gallupe
V. A. Getting
H. G. Giddings
H. W. Godfrey
Eliot Hubbard, Jr.
H. A. Kontoff
J. J. Lepore
A. A. Levi
A. N. Makechnie
J. H. McSweeney
J. C. Merriam
Dudley Merrill
C. E. Mongan
Dwight O'Hara
Fabyan Packard
L. S. Pilcher
Max Ritvo
H. P. Stevens
K. J. Tillotson
A. B. Toppan
J. H. Townsend
J. E. Vance
C. F. Walcott
R. H. Wells
B. M. Wein
Hovhannes Zovickian

NORFOLK
C. E. Allard
B. E. Barton
Carl Bearse
Elizabeth Broyles
G. L. Doherty
Albert Ehrenfried
J. M. Faulkner
H. H. Faxon
P. S. Foisie
Susannah Friedman
T. R. Goethals
D. L. Halbersleben
J. A. Halsted
H. B. Harris
C. G. Hayden
R. J. Heffernan
P. J. Jakmauh
I. R. Jankelson
C. J. Kickham
C. J. E. Kickham
D. L. Lionberger
D. S. Luce
D. L. Lynch
F. P. McCarthy
F. J. Moran
H. R. Morrison
Hyman Morrison
D. J. Mullane
H. A. Novack
R. S. Palmer
G. W. Papen
S. H. Proger
H. A. Rice
S. A. Robins
D. D. Scannell
L. A. Sieracki
S. L. Skvirsky
E. C. Smith
Kathleyne S. Snow
J. W. Spellman
A. R. Stagg
N. A. Welch
P. R. Withington
E. T. Wyman

NORFOLK SOUTH
D. L. Belding
R. L. Cook
Frederick Hinchliffe
E. K. Jenkins
D. B. Reardon
H. A. Robinson
R. G. Vinal

PLYMOUTH
J. C. Angley
A. L. Duncombe
H. H. Hamilton
C. D. McCann
G. A. Moore

SUFFOLK
T. J. Anglem
C. H. Bradford
W. J. Brickley
W. E. Browne
A. J. A. Campbell
E. M. Chapman
M. Henry Clifford
A. P. Derhagopian
N. W. Faxon
Maurice Fremont-Smith
Joseph Garland
G. L. Gately
A. A. Hornor
H. A. Kelly
H. E. Kennard
T. H. Lanman
R. I. Lee
C. C. Lund
C. F. Maraldi
L. S. McKittrick
Donald Munro
F. W. O'Brien
J. P. O'Hare
L. E. Parkins
L. E. Phaneuf
Helen S. Pittman
J. H. Pratt
J. J. Regan
W. H. Robey
Horatio Rogers
H. F. Root
C. G. Shedd
R. M. Smith
Augustus Thorndike
Conrad Wesselhoeft

WORCESTER
A. W. Atwood
George Ballantyne
J. B. Butts
F. B. Carr
J. J. Dumphy
G. R. Dunlop
John Fallon
Donald Hight
Thomas Hunter
H. L. Kirkendall
D. G. Ljungberg
J. A. Lundy
J. C. McCann
D. K. McClusky
J. M. Olson
F. A. O'Toole
E. L. Richmond
N. S. Scarcello
J. J. Tegelberg
R. J. Ward
B. C. Wheeler

WORCESTER NORTH
D. B. Cheetham
J. J. Curley
C. B. Gay
J. V. McHugh

APPENDIX NO. 2

REPORT OF THE EXECUTIVE COMMITTEE

A meeting of the Executive Committee was called to order at 4:00 p.m. on September 8, 1948 by the president, Dr. Daniel B. Reardon, with half the members present. The officers present were, besides the President, the president-elect Dr. Arthur W. Allen; the treasurer, Dr. Eliot Hubbard; and the Secretary.

MATTERS REFERRED TO THE EXECUTIVE COMMITTEE BY THE COUNCIL IN MAY, 1948

1. Should the Society receive certain gifts?

Dr. Eliot Hubbard stated that the Council was not in favor of accepting monetary gifts, even though they were to be used only for charitable, scientific and educational purposes and that he was interested in the question because of the effect on the Society's income-tax status. He questioned the possible danger of accepting gifts from drug firms. Dr. Hubbard suggested that he might question the Treasury Department in a frank letter asking for information. Dr. Robert W. Buck, chairman of the Committee on Finance, stated that he could add no further information. The Secretary moved that the committee defer action until the Treasurer received replies from the American Medical Association and the Treasury Department concerning the whole matter. The motion was carried unanimously.

2. A proposal to make the Committee on Postgraduate Assembly a subcommittee of the Committee on Postgraduate Medical Education (approved by Dr. Leroy Parkins and Dr. Richard Ohler).

On a motion by the Secretary, seconded by Dr. John Curley, Worcester North, this proposal was unanimously approved by the committee.

3. A proposal to have the Society sponsor the art exhibit of the Massachusetts Physicians Art Association at the annual meeting.

Dr. Robert W. Buck pointed out that members of the Association are all fellows of the Society and that the expense to the Society would not be increased by sponsorship. Dr. Reardon stated that it would give the Woman's Auxiliary good work to do and that it would encourage art in the profession. The committee voted unanimously to approve the proposal.

4. The request by Dr. M. J. Schlesinger, Middlesex South, to establish a section on pathology among the membership of the Society.

Dr. Schlesinger stated that this was urged by the New England Pathological Society. He also said that 100 to 125 attended monthly meetings.

Dr. John Fallon, Worcester, suggested that the name be "Section on Pathology and Physiology." Dr. Arthur W. Allen moved that the committee approve of the establishment of a section on pathology and physiology. This motion was seconded, and it was so voted.

5. Action on the request of Dr. Augustus Thorndike, Suffolk, that the President appoint a committee of the Society to confer with the officers and directors of the newly formed Bay State Medical Rehabilitation Clinic to consider in what manner the Society may best assist in the establishment of the clinic or clinics and to report its findings to the February meeting of the Council.

Dr. Henry Marble said he hoped the committee would favor this work of Dr. Thorndike's, and that it was an excellent private charity and had no connection with any federal agency. On a motion by Dr. John J. Curley the committee unanimously approved the appointment of such a temporary committee.

6. The question of a standing committee on medicolegal Testimony. (The former Committee to Consider Expert Testimony had recommended that the by-laws be amended to produce such a standing committee.)

The Secretary pointed out that the chief purpose of the committee would be to discover improper testimony by fellows of the Society at various trials for malpractice cases and that such questions of ethics might well be referred by anyone to the Committee on Ethics and Discipline. The President pointed out that the suggestion of appointing listeners at trials might include all cases in which medical testimony is given.

On a motion by Dr. Lawrence R. Dame, Franklin, seconded by Dr. Curley, Worcester North, the committee voted unanimously not to approve the request to amend the by-laws to produce a standing committee on medicolegal testimony.

Committee Report

Committee on Membership

The Committee met on August 24, 1948, and the Secretary submitted the report, which concerned requests for retirement and resignations and those fellows deprived of membership for nonpayment of dues. With a few minor corrections submitted by the Treasurer, the Executive Committee accepted the report.

New Business

The Secretary read the following resolution submitted by the Hampden District Medical Society:

WHEREAS, Hospital trustees in order to maintain and insure the best possible care of patients in their institutions are increasingly demanding certification in specialties and/or membership in certain national colleges or specialties and,

WHEREAS, It has come to our attention that an irregular situation exists in selection of candidates for membership in the aforesaid organizations, such as the exclusion of candidates from membership by prejudiced local fellow workers followed by the acceptance of some of these men through the intercession of more celebrated practitioners in other areas and,

WHEREAS, We have examples here of failures in board examination followed by marking up of these examinations to an acceptable figure when the mortality of the examination has hit influential and responsible leaders of that particular field of medicine,

The Hampden District Medical Society at its annual meeting on April 27, 1948, petitions the Executive Committee of the Massachusetts Medical Society for the appointment of a committee to investigate such irregularities and evidences of partialities so that personalities may be further minimized and candidates for the organizations mentioned above be treated in an equal and fair manner; such committees to hold hearings and report back to the Society at an early date and the Hampden District Medical Society be later informed of any action which is taken on this resolution.

The Secretary stated that he believed the Committee on Ethics and Discipline could handle any situation that might arise in this regard.

Dr. John J. Curley moved that the matter be laid on the table until the next meeting of the committee. There was a second, and the motion was carried unanimously.

The Secretary read a communication from the Section on Physiotherapy requesting a change of name to "Section on Physical Medicine." On motion duly made and seconded the committee voted unanimously to recommend the change requested.

The Secretary reported the program of the House of Delegates of the American Medical Association to select a candidate for the General Practitioners Award at the interim session, suggested that the Massachusetts Medical Society ought to take steps to select the outstanding general practitioner in Massachusetts in 1949 and asked for permission to notify the district secretaries to present names of candidates to the Executive Committee in time for the interim session in 1949. On motion made and seconded the committee gave unanimous permission.

Dr. Reardon then related a request from Mr. Twomey of the firm of Palmer–Dodge, our attorneys, to have the Society adopt the attitude of *amicus-curiae* and approve of a brief submitted to the court by our attorneys in the case of a physician in the western part of the State who had been sued by a patient for allegedly instituting the narcotic habit. Dr. Reardon stated that the Berkshire District Medical Society was much upset by the case and that the doctor concerned was held in high esteem. On motion of the Secretary the Committee voted to support Mr. Twomey's request to send such a brief to the Supreme Court.

Reports of Committees in Circular of Advance Information

Committee on Cancer

The Executive Committee voted to approve the recommendations of the committee beginning on page 1, line 27.

The Executive Committee voted to approve the recommendation of the committee beginning on page 2, line 4.

Committee on Tax-Supported Medical Care

After considerable discussion the Executive Committee by a small majority voted not to approve the recommendation that the "Medical Care Program" of the Office of Veterans' Services of Massachusetts be approved by the Society.

Advisory Committee to the Red Cross Blood Bank

The Executive Committee voted unanimously to approve the request of the committee beginning on page 4, line 19.

Committee on Veterans' Affairs

The Executive Committee voted unanimous approval of the resolution beginning on page 5, line 16.

Committee on Public Relations

The Executive Committee voted unanimously to approve of the recommendation found in the motion beginning on page 6, line 33.

The Executive Committee voted to disapprove of the resolution of the committee beginning on page 7, line 4. (Dr. Hubbard had stated that he believed students would be poor risks.)

After hearing from Dr. John Conlin concerning the statewide health meeting to be held early in 1949, the Executive Committee voted unanimously to approve the action of the committee beginning on page 7, line 33.

After hearing from the Treasurer and the Secretary the Executive Committee voted unanimously to disapprove of the action of the committee beginning on page 8, line 33.

The Executive Committee approved the recommendation of the committee beginning on page 8, line 46, and recommended that the Committee on Medical Education be the committee to handle the matter.

Committee on Public Health

The Executive Committee approved the recommendation of the committee beginning on page 10, line 49.

The Executive Committee voted approval of the recommendation beginning on page 11, line 43.

The Executive Committee also voted approval of the last paragraph of Dr. Phippen's resolution beginning on page 12, line 39.

Committee on Benevolence

The Executive Committee unanimously voted approval of the recommendation beginning on page 13, line 9, the proposal of the committee and the recommendation beginning on page 14, line 4.

The meeting was adjourned at 6:10 p.m.

H. Quimby Gallupe, *Secretary*

APPENDIX NO. 3

Affairs of Blue Shield

In the past few years basic changes have been taking place in our organization. This group has seen fit in its wisdom to make the president of the corporation and the medical

directors of the corporation, by virtue of the positions that they hold, members of the Council.

I think it was a very necessary and very wise step to take to keep a constant touch and contact between the medical group, its governing body and this corporation, created in 1940.

Another important problem that should be considered is the mechanism for replacement of physicians who are members of the Board of Directors. That will be started through proper channels.

We must think ahead to the time when men who have worked actively for nearly ten years on this corporation will ask for release, and it is very important that men come on who are informed about the problems and the past history of the Corporation so that proper action at all times may be taken by the representatives of the position of the Board of Directors. That is more important than possibly it might appear with the statement to the members of the Council this morning.

I shall also bring up the question through proper channels of whether the by-laws should not be changed so as to have a provision established that the president of the corporation shall be a physician. We felt at times with the undefined future ahead of us that we might want that definitely stated in the by-laws. We might feel it desirable to have a layman as president of the Board of Directors. With the experience of nearly ten years, and the problems that arise, it may be desirable to make certain that the president of the corporation at all times shall be a physician who, of course, will be a member of the Board of Directors.

In the last few years a major reorganization has been made in the relation of Blue Shield and Blue Cross, which is based on the experience of many years. I think they are wise measures.

The first, as outlined in this booklet that you all have received, is that we have changed from our initial basic relation whereby the layman who was executive director of the Blue Cross was at the same time the Executive Committee director of the Blue Shield. At that time, we were a young and promising, we hoped, corporation, and we were not in a position to have a medical director. In the intervening years we have had the services of one of the outstanding young men in the country in this field. It seemed on the basis of this relation that, as the problems that have developed were worked out and since we now have a medical director, we should be established as two distinct corporations, with our own director, who is a physician. I think that was a very fine move and it was accepted by our Board of Directors, the Blue Shield Board of Directors and the Joint Board of Blue Shield and Blue Cross meeting together. That is now our established relation.

It is still necessary, of course, to keep liaison between the two groups. That is accomplished, as you may or may not know, by the fact that there are three members who constitute interlocking members between the two groups. That number of three has been established informally by the Commissioner of Insurance as a number that shall not be exceeded.

We have also established plans for joint meetings of the executive committees of the two boards of directors for problems that may arise between the two corporations, and such problems have arisen; we do need a method of resolving them, and we consider this to be the effective method of approach. We had a joint committee, but it seemed wiser that the new president eliminate that joint committee and have our joint problems discussed by meetings of the two executive committees of the boards.

Now, with reference to other matters, the contract, as you know, has been broadened since my last report to include medical care. That is the second step placed in this group in 1939 in the over-all planning of the evolution of the program.

The next step, the problem of including services in the home and office, will certainly have to wait on time and experience. How far that should be gone into with the prospect of keeping the organization solvent is still debatable, despite the ardent propaganda of some agents in Washington and some lay propagandists who believe as the Washington agents do. It is still debatable, however, how far these minor services should be included in the insurance program. That certainly is a matter for time and study.

We have tried to effectuate our contact with the local groups. It really takes a great deal of plugging, and in this, of course, our medical director is chiefly responsible — he has to do a good deal of plugging to keep the local committees, which were provided for in our initial setup, active and busy.

The reason is chiefly that there has not been enough pertinent material that we can give to them regularly, so as to keep their teeth chewing on this problem. I do feel that, as progress is made, these local groups will be brought into ever-increasing active functioning with the central groups. And if for the present there does not seem to be too much to place in your hands when Dr. Hayden and the representatives of the corporation come into the county, please accept it as evidence that we feel that for the future the local groups will be active and are an important part of our over-all functioning organization.

Furthermore, to keep our contacts locally active and to help the physicians, as you know, we have had periodic meetings with the physicians' secretaries, who were informed of our functions and our program.

Another change since the previous report has been the shifting of the method of claim by the physicians. We moved from the activating of claims from the hospital, where a good many problems were raised and a good many inconveniences created for the physicians, to the initiation of claims directly by the physician. That was done in our local area first in one county, and it did seem to be an improvement and then it was placed on a state-wide basis. If there are difficulties, it is still in its early stage of development, and I hope you will bear with us, and certainly constructive criticism will be appreciated.

I think the physician should keep in mind that the complicated problems of administration have been greatly simplified, which in turn has reduced costs of administration, and that will also be a major responsibility of our group — to keep administrative costs at the lowest point possible.

The local problems that arise from this new method of initiating claims, I think, may be placed in the hands of the hospitals. I believe we must have all hands thoroughly imbued with the need to create smooth functioning. Before we put this on a state-wide basis, we approached all the hospitals, and the administrators were only too happy to cooperate right straight across the State. The problem is the changing personnel in hospitals. Two out of three office administrators may carry this through, whereas the third either may not understand or may fail to grasp its importance, and I think that most of the trouble has probably arisen from such lack of understanding, which I think time will resolve.

The financial situation continues satisfactory. We are still operating in the black with a substantial surplus, which is required by good actuarial planning. This group, in its wisdom, on the recommendation of a committee of the Council, raised the income level for eligibility for service to $3000. This demonstrates that the physician can put the problem of cost of medical care on a proper base. It was a very sound strategic move as well as, I think, a perfectly proper move with reference to the needs of the people.

The question of fee schedule has again been studied by a committee of the Society, Dr. McKittrick's fee-schedule committee, which has a very large representation from across the State. It was felt that at present it was not strategic to make any change in the fee schedule, and this was talked over very thoroughly and the decision was arrived at with reference to three pertinent problems: the major objective of proving that the physician on a voluntary basis can handle this problem of prepaid medical care; from the solvency of the corporation, it can be seen that we are running it satisfactorily as far as the finances are concerned, but it was very apparent that an increase in the fee schedule at the present time could not be accomplished without an increase in premiums; and, with the squeeze that the people are subjected to and the inflationary prices at the present time and the declining enrollment rate, it seemed definitely poor judgment in the opinion of this committee to advise the change of fee-schedule rates.

As you know, with reference to income limitations for service and with reference to items such as fee schedules, the Blue Shield group adopted a policy of referring the matter to the Society, and a committee of the Society advises how to proceed. It is felt that this group, small as it is, is wholly

capable of arriving at a decision regarding such pertinent matters.

How about public relations? We have in conjunction with the Blue Cross engaged the services of a very effective public-relations man, and I think that you have been aware through the newspapers of more activity and a more active effort to enlighten the public about our methods and our objectives. There is one matter that is very vital with reference to public relations. It is subtle and more apparent to those involved in the work in your behalf than to the individual practitioner. There is the question of enough instances to disturb management, to disturb the public, of an excessive differential charge by the physician, in the instance of the patient who is just a little above the level of the income set by this Council. That problem is under study by the Fee Schedule Committee, and of course is a matter in which Blue Shield would not take any action unless instructed by the Committee or the Council, which means, of course, that it will be referred to the Council until we are advised on how to proceed. It is a matter that should be considered very seriously because public relations in the end are going to determine the failure or success of these voluntary prepaid ventures. Our current problems are definite, and of course we hope they will be resolved.

Everybody will make an effort to see that the problems are resolved fairly in the interest of everyone involved. As you know, from the circularized statement, we have had a year and a half of no growth in Blue Shield, and this has also been somewhat characteristic of Blue Cross. Some of the difficulties that confronted Blue Cross a year and a half ago arose primarily from the forces of inflation, and resulted in temporary financial difficulties for that organization. That, of course, held up growth of both corporations. That was inevitable, and the problem is to get the good ship of voluntary prepayment back into the water and under sail. That is the difficulty at this time. It will take judicious consideration of all problems involved, and it will require a very definite stand in protection of the basic principles on which we have dealt.

Now, we are moving definitely toward a solution of those problems, and I am sure of that because I think we must assume that there is goodwill on all sides. Basically, the problems are different, and they have got to be talked out very frankly and resolved across the board, and to that end the two executive committees of the respective corporations are meeting tomorrow night; from that meeting we may reachieve the very close and confidential co-operation that, up until a year and a half ago, existed between the two corporations. And from that confidential co-operation all current problems may be effectively resolved, and then we may see more active sales for both corporations. We must realize that this movement is under very close scrutiny, as shown in the hearings last spring in Washington, and basic error or failure to grow or failure to meet the needs of the people, or any demonstration of anything but full capacity in meeting the problems and administering them, will put us in a very vulnerable position, so I am sure all parties involved will devote themselves to resolving all current problems, and our hope and belief is that this will be accomplished.

Regarding the question of competition from commercial insurance companies, it might be that Dr. Hayden could give that better in figures. I will say that it is very definite and serious. Our only strength was in the service contract, in addition to the fact that operating on a nonprofit basis we should have been able to offer a better contract than the commercial companies. At present I think it is fair to say that with reference to the present hospitalization contract, it can be met by commercial insurance companies, but there is also this fact, which must always be kept in mind: the commercial insurance groups will only move into large groups. They will not take the small groups, which Blue Cross does give service to. They also have pretty excessive enrollment requirements, almost always 75 per cent, and when there is a revamping of the Blue Cross program, the Blue Cross may be able to write a commercial contract that competes favorably. Our program can still compete because the commercial insurance companies can never offer the physician services on a service basis, and I am sure we can work down the financial basis, if we maintain a fee schedule within the present limit that the companies cannot compete with, as far as treatment is concerned.

APPENDIX NO. 4

Report of the Committee on Cancer

The Committee met on August 9, 1948, with Drs. John Conlin, Arthur W. Allen, Thomas J. Anglem, Channing C. Simmons and Shields Warren present.

The problem of the registration of cancer cases was considered. Both compulsory and voluntary registration of cancer cases has been tried. The compulsory registration is far from effective. At present 12 states have some type of cancer registration. The objectives of a registration system are to obtain adequate information regarding the size of the cancer problem and its nature and to obtain information that will be of advantage from the standpoint of better understanding of the factors of importance in etiology. Registration should also greatly improve follow-up systems. Registration in itself is of little value. The use that is made of the registered cases is of importance.

The chief advantage for the patient is that it will aid in encouragement of periodic follow-up examinations. The three potential sources of registration are: private practitioners, clinics and hospitals and laboratories of pathology.

The best and most effective source is the private practitioner. The compulsory-registration system has proved to be somewhat ineffective. Unless there is full co-operation of all interested, no real value would be obtained from the mere fact of registration.

It is therefore recommended that the Massachusetts Medical Society endorse the principle of voluntary registration of cancer cases and that the Committee on Cancer be instructed to develop a system for consideration by the Council.

In 1940 the Committee on Publications, an offshoot of the American Cancer Society and the group in Massachusetts interested in cancer control, prepared a manual on cancer for the general practitioner. This was distributed by the Massachusetts Department of Public Health to all practitioners in the State, and a number of copies were sold outside the State.

The total edition was approximately 14,000 copies. There still continues a demand for this volume, but in the eight years that have elapsed, considerable advances in the knowledge of cancer have taken place. The Committee on Publications, of which Dr. Channing C. Simmons is chairman, has expressed its willingness to prepare an up-to-date edition of this manual.

It is recommended that the Committee on Publications be encouraged to prepare a revised edition of the *Cancer Manual.*

Of considerable interest is the amount of money being raised for cancer and spent for cancer in Massachusetts.

In the period from September 1, 1947, to August 10, 1948, the Massachusetts Division of the American Cancer Society received $519,336.69. During that period the national society made grants totaling $457,204 in Massachusetts, and the Massachusetts Division made additional grants totaling $273,325.90, a grand total of $730,529.90, or $211,193.21 more money made available for service and research in Massachusetts than was raised here.

In addition, construction grants of over $1,000,000 were made by the United States Public Health Service for the construction of cancer facilities, and several hundred thousand dollars were made available for research in Massachusetts. The federal Government made $75,286 available for cancer to the Massachusetts Department of Public Health in the fiscal year 1948.

Great interest has been aroused during the year in the vaginal-smear method of diagnosis of cervical and uterine cancer, particularly by ill advised advertising in newspapers and lay periodicals. The Committee on Cancer has studied the problem regarding whether vaginal-smear diagnosis should be encouraged as a routine procedure in pathological laboratories. At the present time, it is our belief that further work needs to be done on the evaluation of the test before a definite statement can be made.

There is no question that the vaginal-smear examination offers an added means of diagnosis of cancer of the female genital tract — perhaps the best means in certain types of cases. We are not yet sure that the time and money consumed in making a routine vaginal smear in every woman of cancer age are warranted. We hope in another year to have

sufficient data for a report on this point. In the meantime it is suggested that in all cases of vague or ill defined gynecologic signs or symptoms, with no obvious abnormality to account for them found on pelvic examination, the vaginal smear be used as an additional means of diagnosis.

During this past year, with the aid of the Massachusetts Division of the American Cancer Society, lectures on cancer were provided for each of the district societies. Its interest in the lectures varied, and it is hoped that the most effective method for presentation of points of diagnostic and therapeutic value can be evolved.

SHIELDS WARREN, *Chairman*
THOMAS J. ANGLEM
ALLEN G. RICE
CHANNING C. SIMMONS

APPENDIX NO. 5

REPORT OF THE COMMITTEE ON TAX-SUPPORTED MEDICAL CARE

As a result of the meeting of the Committee on Tax-Supported Medical Care on July 28, 1948, the following recommendation was made to the Council: that the Council of the Massachusetts Medical Society approve — "Medical Care Program — Policies and Procedures, from the Office of Veterans' Services, Room 123, State House, Boston, Massachusetts. Effective July 15, 1948," with the inclusion of the amendment to which Commissioner O'Day has agreed as follows:

> You may rest assured that after your Massachusetts Medical Society meets and approves the program, I will be pleased to notify all of my agents throughout the Commonwealth of the action, and that this approval is effective subject to renegotiation.

ALBERT A. HORNOR, *Chairman*
FREDERICK S. HOPKINS
FRANCIS P. McCARTHY
FRANK W. SNOW

APPENDIX NO. 6

MEDICAL CARE PROGRAM, OFFICE OF VETERANS' SERVICES

PURPOSE:

A recent survey discloses a large amount of apparently unnecessary medical expense having been incurred with a corresponding increase in medical cost. Because of this, it is imperative that policies for procedures and cost control be adopted. It is not our intention to curtail necessary medical care, but only to provide a needed uniform plan of payment for those items of medical care furnished to all persons accepted by the Office of Veterans' Services. It is your responsibility to see that this plan is carried out. The following are the instructions:

I *Physicians' Services*

1. *Eligibility*:

When physicians' services are needed, payment will be provided as an addition to the regular budget. On temporary cases such payment is not to be encouraged unless an emergency arises.

2. *Authorization*:

Permanent recipients will be allowed two visits in any one month by a physician. Additional visits thereafter must be authorized by the Local Agent and substantiated by a written statement from the physician giving the diagnosis, prognosis, and an estimate of the number of calls necessary to complete the treatment.

3. *Fee Schedule*:

The following uniform fee schedule is to be hereafter adopted by this Office:

Office Visit — $2.00
Home Visit — $3.00
Multiple Visits

When more than one patient is seen during one call at the office, home, or nursing home, *full fee* will be allowed for the *first visit*. Thereafter, full fee for one patient and $1.00 for each additional patient.

Travel Allowance — $2.00 extra in rural communities where the physician is compelled to travel a considerable distance.

Night Calls — $1.00 additional, between 11 p.m. and 7 a.m.

NOTE: — Extra fees for medication, either home or office visit, will not be allowed unless fully explained and approved by this Office.

II *Hospitalization*

1. *Eligibility and Notice*:

Eligibility for hospital remains as heretofore and will be provided only when financial need exists.

All Agents must notify this Office within three (3) days following the entrance of an applicant into a hospital, either by letter or application, and this must be followed by a thorough investigation by the Local Agent to determine if financial need exists. This investigation should disclose all available resources of the applicant and whether part or all of the expense can be paid either by the applicant or by members of the family.

If the applicant has Blue Cross, or Blue Shield, or any other hospital insurance, this must be used before hospital expense will be assumed by this Office.

A *General Policy Re "Service" Care*:

All recipients or applicants for Veterans' Benefits who apply for hospitalization must be immediately notified by you that only "service" care in a ward will be provided.

(1) *Definition*:

"Service" care is defined as care in hospitals where the staff of physicians provides free medical treatment and/or surgery to ward patients. Therefore, no fees for doctors are allowed.

(2) *Rate of Payment*:

Payment through this Office to a hospital will be provided at a maximum daily all-inclusive rate not to exceed $8.00 per day.

(3) *Hospital Extras*:

Certain hospital cases may require unusually expensive drugs, such as streptomycin or large quantities of penicillin. Individual consideration will be given to such extras as charged by the hospital, but to no other extra charges submitted, such as use of operating room, laboratory fees, etc.

Charges for blood transfusions will not be allowed. Any necessary blood will be provided through this Office in exchange for any used by the hospital and given to the recipient. In hospitals west of the City of Worcester, this Office will not be able to provide this blood at the present time. Blood banks will be used in that area soon after July 1st, 1948.

(4) *Notice to Hospitals and Physicians*:

All Agents, on receiving these instructions, must immediately contact the hospitals in their district and notify them of the above policy. The attending physician must be notified, either by the applicant or by the Agent, that Veterans' Benefits patients are to enter hospitals under the above-specified "service" care plan, and that no allowance will be provided for the care furnished by a doctor in the hospital.

B *Policy Re Hospitals Where Free "Service" Care Is Not Available*:

The basic policy of this Office is to use those hospitals providing free "service" care to ward patients to the fullest extent wherever possible throughout the State. However, this Office recognizes that there are certain areas in the State, chiefly rural, where there are no hospitals in the vicinity in which the staff of physicians gives free care to ward patients.

Therefore, when there is no hospital within a fifteen-mile radius of the recipient's town where such free medical or surgical service for ward patients is available, recipients of Veterans' Benefits may be admitted to the local hospital and this Office will provide payment to the attending physician or surgeon at Blue Shield rates. It is important to note that the Blue Shield rate for an operation includes the fee for the assistant surgeon. No extra payment to an assistant will be allowed by this Office. A fee for the anesthetist within Blue Shield rates will be allowed.

The above-outlined policy (regarding the all-inclusive rate not to exceed $8.00) as paid to the hospital for hospital care will remain in effect and have no bearing on this plan to pay for physicians' services.

NOTICE TO BE GIVEN HOSPITALS, DOCTORS AND RECIPIENTS:

All Agents, on receiving these instructions, must immediately contact the hospitals in their district and notify them of the above policy. The attending physician must be notified either by the Agent or by the recipient that only ward care will be provided through this Office.

Payment for physicians' fees will be made in the following list of hospitals only:

Plunkett Memorial Hospital	Adams
Farren Memorial Hospital	Montague
Franklin County Public Hospital	Greenfield
Fairview Hospital	Great Barrington
North Adams Hospital	North Adams
Wing Memorial Hospital	Palmer
Mary Lane Hospital	Ware
Community Memorial Hospital	Ayer
Webster District Hospital	Webster
Emerson Hospital	Concord
St. Luke's Hospital	Middleboro
Claflin Hill Hospital	Milford
Norwood Hospital	Norwood
Jordan Hospital	Plymouth
Cape Cod Hospital	Hyannis
Tobey Hospital	Wareham
Nantucket Cottage Hospital	Nantucket
Martha's Vineyard Hospital	Oak Bluffs
Winchendon Hospital, Inc.	Winchendon

FEES ALLOWED:

1. *For medical care* cases where no surgery is involved (as in pneumonia, etc.) the allowed fee for the attending physician in the above-listed hospitals will be $4.00 for the first visit in the hospital and $2.00 for each visit thereafter. During any one hospital stay, for the first two months the total fee to be paid the physician shall not exceed $150.00.

2. *For surgical care* in these above-listed hospitals this Office will provide payment at Blue Shield rates.

NOTE: — Veterans seeking hospitalization must avail themselves of facilities offered by the Veterans' Administration and the Soldiers' Home in Chelsea. On temporary cases, hospitalization will not be considered unless they are emergencies. Applicants must assume the responsibility of temporary hospitalization bills when they return to work.

III *Drugs.*

The purchase of medicines and other supplies through local drugstores has been much abused in many localities. From the effective date of this order only those medicines, or drugs, or supplies that have been *prescribed* by a physician will be accepted as legitimate charges. Whenever possible, the physician should be asked to prescribe U.S.P. (United States Pharmacopeia) or N.F. (National Formulary) drugs because of the economy that would result without loss of efficiency. If the patient is still under care for the same illness as when a medicine is prescribed, refills may be authorized. Refills on prescriptions written over a six months' period previously will not be allowed. Local Agents are required to instruct recipients that all drugs or orders for supplies are hereafter to be authorized by the Agent before their purchase.

Ordinary medicine chest supplies, such as aspirin, band-aids, disinfectants, etc., must be purchased from the allowance under personal needs as contained in our budget.

Itemized bills must be submitted in duplicate by the drugstore to the Local Agent and one copy sent to this Office. These must show the name of the purchaser, the date purchased, and the names and quantities of drugs. Current cases, where the purchase of drugs has already been authorized, will continue under the same policy as heretofore without any impairment of service. Bills for such medication already authorized will be submitted as outlined above.

A *Clinics and Out-Patient Services*:

Agents must advise applicants of Veterans' Benefits to take advantage of available out-patient clinics or other type of clinics. Admission fees as charged by the clinics to persons who may be classed as being in these circumstances will be allowed, except in the case of tax-supported hospitals and clinics where this Office is not legally committed to pay.

Veterans who are eligible for out-patient treatment at a Veterans' Administration hospital or through a Veterans' Administration contract doctor must use this type of service in preference to any service available through this Office to non-service connected disability cases.

B *Visiting Nurse Service*:

The fullest use of the Visiting Nurses must be employed wherever they are available. Agents should consult the physician regarding the advisability of delegating appropriate tasks whenever possible. The prevailing community rate charged by the Visiting Nursing Association per visit will be allowed by this office for eligible cases.

Family Responsibility:

It is noted on many of our cases that members of the family have been contributing to the medical expenses of the applicants. This policy should be continued and encouraged.

Agents' Authorization Notice:

Medical bills not in excess of $10.00 a month shall be submitted only at the termination of a two months' period with a copy of the bills. Before they are charged on the monthly returns, authorization must be made by this office. All medical bills must be submitted within sixty days.

Physical Examination:

In cases where there is a question of an applicant's ability to work, this office will authorize a medical bill for a physical examination. The Agent should authorize two or more doctors from which the applicant may select *one* for such an examination.

Special Nurses:

Special nurses will be provided for only in cases when the applicant is in such an extremely dangerous condition that the attending physician orders this additional service. Agents must notify the Commissioner by telephone for this special service.

Enforcement:

The foregoing rules must be adhered to by all Veterans' Agents if you anticipate reimbursement by this office. They will be amended or changed only by official order or authority by the Commissioner.

By order of
HENRY V. O'DAY, *Commissioner*
Office of Veterans' Services

State House
Boston, Massachusetts

APPENDIX NO. 7

REPORT OF THE ADVISORY COMMITTEE TO THE RED CROSS BLOOD BANK

On July 28 a meeting of the Advisory Committee to the Red Cross Blood Bank was held at 8 Fenway.

Present were Dr. John F. Conlin, chairman, Dr. F. Harold Allen, Dr. Stephen Brown, Dr. Joseph E. Ross, Dr. C. Stuart Welch, Dr. Arthur W. Allen and Dr. H. Quimby Gallupe.

Some difficulty was experienced in determining the background of the appointing of this committee and the scope of its work. Many of the key persons having information on these matters were not available for consultation prior to the committee meeting.

The question was raised concerning Rh typing of blood collected by the American Red Cross and processed at the laboratory operated by the Massachusetts Department of Public Health. Funds have been made available for the Rh typing of this blood and Rh typing of prenatal blood specimens continues.

Recently publicized shortages of blood for transfusion purposes were discussed. It was agreed that increased publicity concerning the aims of the American Red Cross blood program in Massachusetts is needed. The co-operation of physicians in this matter is urged.

The House of Delegates of the American Medical Association has twice approved the Red Cross National Blood Bank Program "in principle." In June, 1948, more specific action was taken by the House of Delegates. Among items there approved were the following: local control of blood banks must rest with the county medical society; no publicity is to be released except by mutual consent of the local medical society and of the local Red Cross chapter; differences of opinion should be arbitrated by joint committees from the state medical society and from the American Red Cross; and finally "any provision of free medical service or supply without regard to ability to pay violates the principle that it is each individual's responsibility to assume the obligations of medical expenses just as he does for other living expenses. We deplore the use of the term 'free blood' in Red Cross publicity."

Discussion was had concerning privately operated blood banks, notably in hospitals. Some institutions have shifted to the statewide program. It is understood that there is no attempt to interfere with continuing operation of private blood banks.

There is considerable confusion in the mind of the public as the result of recent appeals for blood through the press and radio. Numerous organizations, hospitals, veterans groups and others, in addition to the American Red Cross, have made public appeals for donations of blood.

The problem of the use of pooled plasma was discussed. In certain instances the use of surplus wartime-collected plasma continues. Recent studies show that the incidence of virus hepatitis following the use of such plasma is approximately 4 per cent. It is, or should be, common knowledge among physicians that virus hepatitis is by no means a benign disease and that fatal cases do occur. The American Red Cross has sent out letters advising the return of surplus plasma which has been distributed. The use of such pooled plasma is permissible only as a life-saving measure when other adequate measures are not possible.

The Committee advocates that the use of pooled plasma, unless processed by current methods of inactivating the virus of hepatitis, be abandoned except under the rare instance noted above. The assistance of the Committee on Postgraduate Medical Education is requested in bringing this to the attention of all physicians.

At the next meeting of the Committee it is planned to request the attendance for information and consultation representatives of the Massachusetts Hospital Association, officials of the American Red Cross Blood Program and representatives of the American Association of Blood Banks and of the Greater Boston advisory group of blood-bank directors.

JOHN F. CONLIN, *Chairman*
F. HAROLD ALLEN
STEPHEN BROWN
WILLIAM B. CASTLE
WILLIAM P. MURPHY
JOSEPH E. ROSS
C. STUART WELCH

APPENDIX NO. 8

REPORT OF THE COMMITTEE ON VETERANS' AFFAIRS

The committee met at 8 Fenway, August 4, 1948, with Drs. Harvey A. Kelly, chairman, Kenneth A. Brown, Samuel Bachrach, John M. Barry, John F. Conlin, Arthur W. Allen and H. Quimby Gallupe present.

A brief report was rendered by officers of the Society concerning matters affecting veterans returning from military service during the past two years. A report was rendered on services that have been available and have been utilized by returning veterans through the Society headquarters.

The Selective Service Act of 1948 as set forth in Public Law 759, Eightieth Congress, was briefly discussed. Current demands of the military services for medical officers were also discussed as informational matters.

Certain matters pertaining to the Veterans Administration and its relations to veterans and to physician veterans were discussed as orientation for the new committee.

The need for certain courses and assistance to physician veterans working for qualification for membership in various specialty boards was discussed. As data on this matter are accumulated they will be referred to the Committee on Medical Education.

The matter of Veterans Administration approval of foreign medical schools for veterans under the G. I. Bill was discussed. It was unanimously agreed that such a situation should be given the widest possible publicity as leading toward a situation that would jeopardize current standards of medical education.

The following resolution was adopted:

The Committee on Veterans Affairs of the Massachusetts Medical Society, meeting at 8 Fenway, Boston on August 4, 1948 unanimously presents the following resolution for adoption by the Council of the Society at its meeting on October 6, 1948:

WHEREAS, It has been brought to the attention of the committee through an article appearing in the May 1, 1948 issue of the *Journal of the American Medical Association* and again by a letter to the Editor of the *New England Journal of Medicine* in the issue of July 22, 1948 written by Dr. A. J. A. Campbell, a fellow of the Society, that the Veterans Administration in Washington is advising veterans that they may attend any medical school in Europe at the expense of the Government; and

WHEREAS, Such European schools are not approved by any accredited approving body in the United States; and

WHEREAS, Such European schools have not been approved by the approving authority for medical schools in this Commonwealth; and

WHEREAS, It follows that graduates of such European schools would not be eligible for examination for registration in Massachusetts; and

WHEREAS, To permit such graduates to become eligible for examination in Massachusetts would lower the high standards of medical licensure already established in Massachusetts by the present medical practice act; therefore be it

RESOLVED, That the Council of the Massachusetts Medical Society protest against the present policy of the Veterans Administration in this respect, and be it further

RESOLVED, That a copy of this resolution be sent to the Veterans Administration and all other interested parties and organizations.

HARVEY A. KELLY, *Chairman*
SAMUEL BACHRACH
JOHN M. BARRY
KENNETH A. BROWN
JOHN F. CONLIN
JAMES M. FAULKNER
GEORGE S. REYNOLDS

APPENDIX NO. 9

REPORT OF THE COMMITTEE ON PUBLIC RELATIONS

The meeting of the Committee on Public Relations was held at the Harvard Club at 6:00 p.m. on August 4, 1948. In addition to the representatives of thirteen district societies there were present: President Daniel B. Reardon, chairman; Dr. Arthur W. Allen, president-elect; Dr. H. Quimby Gallupe, secretary of the Society; Dr. John F. Conlin, director of medical information and education; and Mr. Robert St.B. Boyd, executive secretary.

The report of the Secretary as printed in the advance notice of the meeting of the Council on May 24, 1948, was accepted.

President Reardon read a letter from Dr. Howard F. Root, Suffolk District, in which Dr. Root suggested to the Committee on Public Relations that the Massachusetts Medical Society initiate a "Health Week Program" in November of 1949. This "Health Week Program" would consist essentially of a public exhibit of the most recent advances in medicine, emphasizing preventive medicine as well as treatment. Allied organizations such as the Massachusetts Department of Public Health, the State Nurses' Association, the State Hospital Association and particularly the Woman's Auxiliary of the Massachusetts Medical Society would be invited to take an active part in such a program.

Dr. Bernard Appel, Essex South, stated that the City of Lynn has had such a health exhibit annually for the past fifteen to eighteen years. It was his opinion that there was much public interest in this type of medical educational program. Many of the civic organizations such as the service clubs and parent-teachers' associations lent active support in the conduct of the Lynn program.

Because of the amount of preparation that would be necessary in the initiation and creation of such a health exhibit, it was felt that a program of this type would require at least a year of preparation; hence the date, November, 1949.

A motion was made by Dr. Henry A. Robinson, Norfolk South: "that the Committee on Public Relations recommend to the Council that it initiate such a public-health exhibit" and "that the president of the Massachusetts Medical Society be empowered to appoint a committee consisting of a representative from each district to initiate such a program immediately."

The motion was unanimously carried.

Dr. Howard F. Root, Suffolk, called the attention of the Committee to the problem of how to meet the needs of medical students in the future when the G. I. Bill of Rights ceases to function. It is evident that within a measurable period many students in medical schools who are at present receiving support from the United States Government will be in need of some financial assistance in order to complete their medical education. The Committee on Public Relations is well aware of the fact that the establishment of a loan fund for medical students by the Massachusetts Medical Society represents a change in fundamental policies, but nevertheless considers it to be good public relations. This committee therefore endorsed the following resolution: "That the question of the establishment of a student loan fund be referred to the Council for its serious consideration."

As a matter of information, President Reardon reported to the Committee that Dr. Howard F. Root has been appointed by the American Diabetes Association as chairman of a committee for the establishment of a national "Diabetes Week," December 6 to 12, 1948. The function of this committee is to consider ways and means of securing the earlier diagnosis and treatment of approximately a million patients in the United States and Canada who at present are unknown and therefore untreated.

Dr. John F. Conlin, director of medical information and education, discussed with the Committee on Public Relations the desirability of a state-wide health meeting to be held early in 1949. It is the intention of this meeting to bring together approximately one thousand delegates from the various consumers and suppliers of medical service to discuss matters pertaining to a future program for health and medical care within this Commonwealth.

Numerous agencies and groups, such as the parent-teachers' associations, the dental profession, service clubs and the Massachusetts Hospital Association, have already been informally approached and have expressed an interest and a willingness to co-operate in such a venture. Dr. Conlin stressed the fact that such a meeting would consist in a panel and section discussion of matters pertaining to medicine and health. It is planned to hold brief meetings in major population centers of the state, following the Boston meeting, in order to disseminate material from this initial Boston meeting in the widest possible manner. It was therefore unanimously approved by the Committee on Public Relations that such a state-wide health meeting be conducted and that the Council be requested to appropriate the sum of $500 as the Society's contribution toward this important activity.

Dr. Conlin then gave a very informative talk with reference to the work of his office. He stated that much progress had been made in the formation of the Woman's Auxiliary to the Massachusetts Medical Society. Many projects were under consideration for the continuation and extension of the work of this organization, such as legislation leading to the obtaining of animals from public pounds for the purpose of teaching and medical research; informational programs leading to better understanding of matters of medical economics and so-called, "socialized medicine"; the gathering of medical journals and certain medical supplies for needy overseas areas; the matter of a long-range plan for a health museum; and the planning of activities leading to better relations with medical students, interns, and residents, and in particular with their wives.

Report was made of the general value of the "fact sheet" published by the Massachusetts State Nurses' Association, for which the Society contributed $50.

The matter of exclusive rights of the Massachusetts Medical Society to the radio program, "Doctor's Orders," was discussed. Up to the present there has been no charge by the broadcasting stations with reference to this program. From now on, however, there would be an estimated charge of $140 for an initial twenty-six-week period, with renewal at $170 for the next thirteen weeks, and $210 for an additional thirteen weeks. Some dissatisfaction was expressed by the members of the Committee with reference to the recorded dramatizations, and particularly with the musical backgrounds. The particular value of this program was held to be derived from the interviews with local physicians, "preferably on a live basis." No action was taken with reference to the matter of "Doctor's Orders" as a public-relations instrument.

Increased use of the work of various committees of the Society for bringing its activities before the public was also discussed. It was emphasized that certain committees, such as those on cancer, industrial health, school health and mental health, in addition to serving as reference committees, could well report from time to time on matters of general and current interest in their various fields. Such reports to the Council could well furnish the basis of periodic news releases and so keep the Society and its interest in medical progress and public health before the public eye through an interested and co-operative press.

Dr. Conlin pointed out the importance of making every effort to interest medical students, interns and residents in the desirability and importance of membership in the Medical Society. It was felt that the present flat fee for member-

ship in the Massachusetts Medical Society was a barrier to many eligible physicians during their early years of formal postgraduate training. The policy of an ascending scale of membership dues to ease the financial burden of these physicians might be a desirable policy to be initiated by the Society.

The Committee on Public Relations recorded itself as endorsing such an ascending scale of membership dues and urges that this matter be referred to a proper committee for study.

As further evidence of the interest of the Massachusetts Medical Society in this select group of students now in our approved medical schools in the Commonwealth, the matter of granting some sort of annual award to a fourth-year student in each of our three medical schools, presumably in the course of the annual meeting of the Society, was discussed. It was brought out that such an award would not necessarily be based entirely on scholastic attainment or on "likelihood to succeed," but would represent an attempt to single out certain persons as exemplifying intangible qualities that serve to designate him as "the good physician."

It was moved and unanimously approved that the Committee on Public Relations recommend to the Council the appointment of a committee to determine the nature of such an award and the proper means of selection of the recipients of this award after due consultation with the deans and faculties of the medical schools.

Dr. Conlin furthermore urged that the members of the Public Relations Committee use the Society headquarters as a clearing house and central source of information. He urged that newsbreaks on matters detrimental to good medicine be reported promptly to Society headquarters. He furthermore suggested that reports of radio programs, forums and other special events within the districts are matters of public relations, and such information should be sent to him as Director of Medical Information and Education.

A major defect that continues is the absence of a qualified and co-ordinated speaker's bureau. Fellows of the Society capable and willing to address various groups are requested to communicate with their district public-relations councilors. Demand for such speakers is increasing, and at times it is impossible to comply with all requests. Future months will see a marked increase in the demands for qualified speakers. Recently, there were received requests from the Massachusetts Department of Public Health and from a considerable number of organizations to furnish speakers for various programs. Such activities are nearly always without monetary compensation and represent a major contribution to public service and to better mutual understanding within the community.

DANIEL B. REARDON, *Chairman*
HAROLD R. KURTH, *Secretary*

APPENDIX NO. 10

REPORT OF THE COMMITTEE ON PUBLIC HEALTH

At the first meeting of the Committee on Public Health held June 5, 1948, the following members were present: Drs. Roy Ward (chairman), Conrad Wesselhoeft, Warren R. Sisson and John J. Poutas. Dr. L. Jackson Smith of Springfield was unable to be present. Also present were Dr. Arthur W. Allen president-elect, and Dr. H. Quimby Gallupe, secretary of the Massachusetts Medical Society.

The first item of business was the election of a secretary. Dr. John J. Poutas was elected secretary for the third consecutive year.

At the request of Dr. Ward, the secretary then read to the Committee a letter from Dr. Walter E. Barton, dated October 29, 1947. Dr. Barton submitted this letter as chairman of the subcommittee on mental health, pointing out that in August, 1948, a congress will be held in England dealing with mental-health problems. This International Medical Congress has asked that medical societies sponsor regional meetings in the interest of the prevention of sexual psychopathy. It was pointed out that on July 16, 1947, the Massachusetts Medical Society offered to co-operate in any way possible with the Massachusetts Recess Commission, which studied this problem. It was Dr. Barton's request that the regional meetings desired be sponsored by the Society rather than through the specialists' channels of the Massachusetts Psychiatric Association. It is the opinion of the subcommittee on mental health that this project is too cumbersome to be included in the annual meeting of the Society. A discussion of Dr. Barton's letter elicited the approval of the Committee, and Dr. Wesselhoeft made a motion that the chairman of the subcommittee, Dr. Walter E. Barton, communicate with Dr. W. Richard Ohler, chairman of the Committee on Postgraduate Medical Education, and develop with him the inclusion of this subject in the postgraduate program, being mindful of the fact that this was in effect a pediatric problem more effectively covered by a panel of speakers covering all age groups rather than by one single speaker.

The next item on the agenda was a report by Dr. Sisson of his analysis of the data submitted by the various medical schools in New England, outlining the educational program with respect to preventive medicine, including accident prevention. Dr. Sisson reported that in his opinion this problem is being very effectively attacked by the various life-insurance companies. He was of the opinion that medical schools should enlarge the scope of their program to include more adult lay education. He recommended to the committee that no particular action be taken at this time other than to communicate our interest in this matter to the Director of Medical Information and Education. His recommendation was approved by the Committee.

The secretary then read to the Committee two communications from Dr. Lewis C. Robbins of the Heart Demonstration Program being conducted in the City of Newton by the United States Public Health Service. This program, together with an epidemiologic study of heart disease being conducted by the Public Health Service in the Town of Framingham, was endorsed in principle by this committee in March, 1948. As a result of this endorsement, the Council approved these studies. Monthly reports of April and May, 1948, of the program as conducted in Newton were read. It was agreed by the Committee that the Public Health Service physicians conducting the program in the City of Newton and in the Town of Framingham should be invited before the next meeting of the Committee on Public Health to give a report of progress. It was also recommended by the Committee that Dr. Howard B. Sprague be invited to the meeting of the Council to answer any questions about these programs.

The next matter on the agenda was a reading of a letter from Mr. Parker Wheatley, of the Lowell Institute Co-operative Broadcast Council. In this letter Mr. Wheatley outlined a radio program with health topics, particularly infant care. This program is endorsed by all of the Boston universities and colleges and is indirectly supervised by the deans of the three Boston medical schools. In his letter, Mr. Wheatley asked for the committee's consideration of his educational program and, if possible, its endorsement.

It was decided by the Committee that we communicate our interest and endorsement to the Director of Medical Information and Education with the recommendation that he further study the matter of Society co-operation in this regard. It was recommended that Dr. Conlin get in touch with Mr. John E. Farrell, executive secretary of the Rhode Island State Medical Society, relative to this program in the interest of avoiding conflict with a similar program sponsored by the Council of New England Medical Societies.

The next matter for discussion was a recent editorial in the *New England Journal of Medicine* relative to the advisability of active immunization against tetanus. After considerable discussion as to the advisability of general community active immunization against tetanus, the following resolution was adopted: that the Committee is interested in the proper and judicious use of tetanus toxoid in active immunization and was pleased to note that it was the subject of editorial comment in the *New England Journal of Medicine*.

Next on the agenda was a reading of a letter from Mr. Gates, of the New England Heart Association. This letter outlined the proposed program of that association whereby a certain amount of money would be available for the provision of penicillin in cases of subacute bacterial endocarditis. This program has the approval of Drs. Edward F. Bland, Samuel A. Levine and Maxwell Finland.

No test for indigency will be carried out. A statement from the patient's physician to the effect that treatment would be a financial hardship and that funds for penicillin are not available from other sources is expected to suffice.

The Committee approved of this program of the New England Heart Association and recommended that when agreeable to the New England Heart Association it might be the subject of editorial comment in the *New England Journal of Medicine*.

Dr. Howard F. Root appeared before the Committee and outlined the responsibility of the medical profession in the earlier discovery and treatment of diabetes mellitus. He read to the Committee a proposed resolution of Dr. Phippen, as follows:

WHEREAS, The medical profession has always recognized its obligation for the discovery, treatment, and prevention of diabetes mellitus; and

WHEREAS, The number of latent and undiscovered diabetic patients in the United States, according to surveys, is much larger than had been supposed, and is estimated to be about one million persons; and

WHEREAS, There exists also a large number of patients whose diabetes is neglected and who are therefore under ineffective or no treatment; and

WHEREAS, The American Diabetes Association, Incorporated, whose membership consists of more than a thousand doctors interested in diabetes, has appointed a committee to formulate plans for a national "Diabetes Week," December 6 to 12, 1948; and

WHEREAS, The purpose of this effort is to assist doctors and local committees in effectively carrying out continuing plans for discovering the unknown diabetics and guiding them to their physicians, and for spreading widely to the public, information about diabetes; and

WHEREAS, This is to be a doctors' project, of the profession, by the profession, and for the public; and

WHEREAS, To achieve the aims of "Diabetes Week," the American Diabetes Association seeks to enlist the formal support and active co-operation of the medical profession through the American Medical Association and its constituent and component societies; therefore be it

RESOLVED, That the Council of the Massachusetts Medical Society heartily endorse the efforts of the American Diabetes Association in behalf of the undiscovered and untreated diabetic and approve of the plans for a "Diabetes Week" from December 6 to 12, 1948.

Furthermore, be it resolved that the delegates from the Massachusetts Medical Society to the House of Delegates of the American Medical Association be instructed to present this resolution to the House and recommend that the trustees of the American Medical Association and all state, county and other medical societies co-operate and participate in the effort to find as many as possible of the unknown diabetics in order to bring them under medical treatment.

The Committee approved Dr. Phippen's resolution and a motion was made and adopted that we recommend to the president of the Massachusetts Medical Society that a committee be appointed to expedite the Massachusetts "Diabetes Week" program from December 6 to 12, 1948; that this committee be empowered to act; and that its efforts be co-ordinated with those of Dr. Ohler's Committee on Postgraduate Education. It was also moved and adopted that the Council take necessary action relative to the final paragraph of Dr. Phippen's resolution.

The final item of business was a discussion of the need for active interest of the medical profession in the problem of geriatrics. It was recommended that Dr. Ward inform Dr. Robert Monroe of the Committee's interest and desire to be of assistance.

ROY J. WARD, *Chairman*
JOHN J. POUTAS, *Secretary*
WARREN R. SISSON
L. JACKSON SMITH
CONRAD WESSELHOEFT

SUPPLEMENTARY REPORT OF COMMITTEE ON PUBLIC HEALTH

During the last session of Congress the sum of $500,000 was appropriated to make effective the National Heart Act. This sum is to be distributed to a group of states yet to be selected. It is the desire of the Department of Public Health that Massachusetts be included in this group of states, and that a portion of this fund be allotted to them to further their study of heart disease already initiated here. The Department has drawn up the following program for the development of this study. This program has the approval of the Committee on Public Health.

A National Heart Institute has been established by Congress this year. As a part of this over-all heart program, the Massachusetts Department of Public Health is hoping to inaugurate a heart demonstration program in this state. It is concerned with attempting to meet the growing problem of heart disease, which, according to Dr. Paul D. White, is the greatest public-health problem of the day. The proposed program recognizes that the physician in private practice is the key man in the control of heart disease. This program is an attempt to assist the physician, aid him where possible and increase his effectiveness in the community without establishing new services.

Appointment of advisory committees. Two committees shall be appointed: one shall be a technical advisory committee composed of specialists in heart disease. This committee shall discuss matters of policy and, by a fine screening, review the important policy matters. The second committee shall be called the operating committee. This committee shall be composed of representatives of the several agencies and interests in heart disease in the local area. It shall be concerned with making a continuous study of the operations of the demonstration program, as well as other heart activities of the area. It shall make recommendations to official and other agencies concerning the better operation of the program.

Inauguration of an educational program for physicians. Success in this program depends on participation by physicians. Pessimism on the part of many general practitioners, together with lack of knowledge on the part of some, is an obstacle to heart-disease control. The Department of Public Health will inaugurate, in co-operation with the professional medical groups, a state-wide program of physician education. As part of the Massachusetts Medical Society's graduate courses, sessions on heart diseases, better to train physicians for general practice, will be arranged by the Department with the assistance of the New England Heart Association. No attempt will be made to develop cardiologists. The purpose will be to develop an awareness on the part of physicians concerning the cardiac problem, the difficulties of diagnosis of certain types and the limitations within which the general practitioner can safely operate without harming the patient. No certificate will be given by the Department for completion of the course. The demonstration of heart sounds by the use of a multiple stethoscope amplifier will be provided physicians. Preliminary discussions have been held with Society officials, and tentative plans made. Physicians not only will receive information concerning the clinical aspects of heart disease and the sociologic and psychologic aspects, but also will be constantly informed of the progress of the heart program. Methods of providing the physicians with important recent literature on heart disease will be one of the prime functions of the technical advisory committee. Whether this be in the form of a lending library in co-operation with the Boston Medical Library, the preparation and distribution to all physicians of a heart manual similar in style to the cancer manual or some other medium will be decided by the Committee. Approximately a quarter of the physicians in Massachusetts are not members of the Society. They are graduates of substandard schools. This group constitutes the greatest need in physician education.

Inauguration of an educational program for nonmedical health personnel. The nurses, social workers, biometricians, educators and other health-department personnel, together with lay members and employees of local boards of health who may be assigned to a heart program, should have an adequate knowledge of the public-health aspects of heart disease. Courses should be planned to meet this need, and furnished to key members of the various public-health professions. The instruction should begin with the health workers in the demonstration area and expand as rapidly as possible. Eventually, all members of these professions who will engage in heart-control projects must be oriented.

Development of facilities of existing clinics. In Massachusetts there are 19 hospitals with heart clinics meeting regularly, and 6 additional ones by appointment, which follow to a greater or lesser extent the procedures outlined by the American Heart Association. Some of these clinics have

not been able to adhere completely to the suggestions of the American Heart Association, owing to lack of funds. These clinics can be helped either by the purchase of equipment, by furnishing of service for indigent patients, or by assistance in providing personnel. Approval by the American Heart Association shall be the goal of the cardiac-clinic subsidization. Funds will not be available to clinics unless such funds will permit the clinic to meet the standards of the Association. Available funds will be furnished cardiac clinics approved by the technical committee.

Selection of a demonstration area. The northeastern district, consisting of 10 cities and 35 towns, will be chosen for a demonstration area. There are 18 hospitals in the 10 cities, and 1 in each of 7 towns. The total bed capacity is 2008. This area had a total population of about 600,000 in 1940, with 240,000 persons over the age of forty. The distribution of the population in this district ranges from a town of about 800 to a city of approximately 100,000. The establishment of relations with the local and state heart-association officials will be made at the earliest opportunity. The Massachusetts Department of Public Health will appraise the association of program plans and discuss the most effective methods of co-operation. Goals will be established as a part of the program for co-operative projects.

Survey of the facilities in the demonstration area. The facilities for diagnosis, treatment and care of cardiac disease should be ascertained and made use of. Information regarding the presence of heart disease and various environmental factors regarding living conditions that may be detrimental to the well-being of the patient will be ascertained by spot surveys similar to those conducted in cancer.

Establishment of a demonstration heart registry. In the demonstration area a heart registry will be started. This registry will be of great assistance to the profession. It will elicit facts on incidence and permit evaluation studies of the most worthwhile parts of the program, the degree to which patients follow the recommendations of the professions and many epidemiologic facts. It will enable physicians, who so desire, to make use of the part of the program discussed below under public health services for cardiac patients.

Inauguration of a state-wide educational program in heart diseases for the laity. After the indoctrination of the medical profession in the basic principles of control is well underway, a state-wide educational program for the laity should be inaugurated. Preparation for this activity could begin at an earlier date. The scope of education in heart diseases shall be determined by the Advisory Committee and then put into concrete form by the Department. Use will be made of all the educational mediums, such as lectures, radio, pamphlets, charts, exhibits, newspaper articles and movies.

Development and extension of public-health services for cardiac patients in local health departments. The local health organization in the demonstration area should furnish such follow-up and other services for cardiac patients as are consistent with the disease and requested by the attending physician. Such a program will be designed to increase the effectiveness of the practicing physician, through health education, and making available such services as rehabilitation, nutrition, nursing and epidemiology. Co-operation with the local heart association will increase the effectiveness of the program.

Personnel training. The contemplated expansion of the heart program will necessitate more personnel trained in public health and heart disease. A personnel-training program will be started on a small scale. This program will be designed to give public-health training to physicians, health educators, nurses and other public-health workers commensurate with the needs of the program.

Statistical studies. Statistical studies to measure the effectiveness of the program will be frequently done, as well as other statistical studies on heart diseases similar to those found useful in cancer and diabetes control.

Throughout the program every effort will be made to avoid duplication of effort and to furnish the utmost co-operation among the various groups involved. The Heart Disease Epidemiology Study, the Heart Demonstration Program, Rheumatic Disease Program and Division of Hospitals will co-ordinate their efforts to accomplish the greatest results. Early liaison will be established with the New England Heart Association and local affiliates.

Federal Budget for Heart Program

Breakdown of Codes:			
01	Assistant director	$5,400.00	
	Public-health social work supervisor	2,880.00	
	Public-health nursing (2) supervisors	5,760.00	
	Assistant biometrician	2,460.00	
	Supervisor of public-health education	2,800.00	
	Senior statistical clerks (2)	4,320.00	
	Senior clerk and stenographer	1,980.00	$25,600.00
02			
03	Consultant	$1,500.00	1,500.00
07	Aid to existing heart clinics	15,000.00	15,000.00
10	Travel and automotive expense	1,500.00	1,500.00
11	Advertising and printing	1,000.00	1,000.00
13	Personnel training	6,000.00	
	Medical education	10,000.00	
	Nonprofessional education	1,000.00	17,000.00
14	Office expenses	1,000.00	1,000.00
15	Automobiles (2)	3,300.00	
	Office equipment	1,200.00	4,500.00
16	Garage rental	360.00	
	Other rent	3,000.00	3,360.00
	Total budgeted		$70,460.00

Heart Clinics in Massachusetts

Name of Hospital	*Cardiac Clinic*
Springfield Hospital	Every Saturday by appointment
Lawrence General Hospital	Once a week
Bessie M. Burke Hospital, Lawrence	Once a week
Worcester City Hospital	Fridays, 8:30 to 10:00 a.m.
Memorial Hospital, Worcester	Wednesdays, 9 a.m.
St. Luke's Hospital, New Bedford	Tuesdays, 9 a.m.
Union Hospital, Fall River	Dr. Leach by appointment
Boston:	
Massachusetts General	Cardiac Clinic
Massachusetts Memorial	Cardiac Clinic
Massachusetts Osteopathic	Cardiac Clinic
Peter Bent Brigham	Cardiac Clinic
Carney	Weekly by appointments
Beth Israel	Cardiac Clinic
Boston City	Cardiac Clinic
Boston Lying-In	Cardiac Clinic
St. Elizabeth's	Cardiac Clinic
Cambridge:	
Mt. Auburn	Weekly by appointments
Cambridge City	Weekly by appointments
Chelsea:	
Soldier's Home	Cardiac Clinic
Newton-Wellesley Hospital	Cardiac Clinic
Waltham Hospital	Weekly by appointments
The best available information on private clinics are:	
Baker Clinic	Cardiac Clinic
Lahey Clinic	Cardiac Clinic
Pratt Diagnostic Clinic	Cardiac Clinic
Boston Dispensary, Bennet Street	Cardiac Clinic

General and Allied Special Hospitals in Northeastern Health District

City or Town	*Name of Hospital*	*No. of Beds*
Amesbury	Amesbury	35
Beverly	Beverly	166
Danvers	Hunt Memorial	20
Gloucester	Addison Gilbert	71
Haverhill	Benson	34
	Hale Municipal	161
Ipswich	Benjamin Cable	19
Lawrence	Bessie Burke	125
	Clover Hill	55
	Lawrence General	183

Lynn	Lynn Health Department	50
	Lynn	202
	Union	52
Marblehead	Mary A. Alley	18
Melrose	Melrose	101
Methuen	Mary E. McGowan	26
Newburyport	Anna Jacques	53
	Worcester Memorial	24
Peabody	Josiah B. Thomas	65
Salem	North Shore Babies	50
	Salem Health Department	52
	Salem	224
Saugus	Saugus General	20
Stoneham	N. E. Sanitarium & Benevolent Association	150
Woburn	Charles Choate Memorial	52

Total number of hospitals, 25; total number of beds, 2008

APPENDIX NO. 11

Report of the Committee on Benevolence

This committee was appointed to implement the suggestion that the Society give thought and take action in regard to aid for physicians who are incapacitated through no fault of their own. It has also been suggested that in certain cases we might assist widows and orphans of physicians.

These functions are not new among doctors in Massachusetts. They have been performed for nearly a hundred years by the Massachusetts Medical Benevolent Society. Because this organization was especially designed for these purposes your committee decided at its first meeting that it would be undesirable to duplicate such activities. Instead, it is hoped that we may actively co-operate with the Massachusetts Medical Benevolent Society and together with it render a single amplified service.

Your committee believes that this could be accomplished if a new standing committee to be known as the Committee on Benevolence were first established. This committee would then represent the Council and could deal with the Benevolent Society in the following manner:

The Committee on Benevolence would ask the Committee on Finance and the Council for an annual budget of not more than $10,000. The Benevolent Society would make an annual estimate of its needs as applied to Massachusetts Medical Society members. The Committee on Benevolence would then pay the Benevolent Society the amount estimated, within the annual budgetary limit of $10,000. All applicants would apply to the Benevolent Society, and the dispensing of benevolence would be entirely in the hands of this group.

At the end of each year, any money paid to the Benevolent Society by the Benevolent Committee, but not used, would stand at the credit of the Committee on the Benevolent Society's books and would be applied to the following year. The amount of such credit would be shown in a statement made to the Committee by the Benevolent Society on or before December 31 of each year. If, on the other hand, the needs were to rise above the Benevolent Society's estimate during the year, the Committee on Benevolence might authorize further payments to the Benevolent Society up to the amount of the annual budget.

If the actual needs did not absorb the annual budget — that is, if they were less than $10,000 — the balance would be earmarked in a Committee on Benevolence account, to be invested by the Treasurer in liquid securities, which, with their interest, would provide a Benevolent Fund. This Benevolent Fund could be drawn upon at the discretion of the Committee on Benevolence if in any given year extraordinary demands for relief created a need above and beyond the budget allotment for that particular year.

For example, the Benevolent Society estimated a need of $8000, this amount would be given to them. If they used but $7000, a balance of $1000 would remain on their books to the credit of the Benevolent Committee, and the next year's estimate would be correspondingly reduced. If the Benevolent Society found that it was going to need more than the $8000 estimated, the needed amount could be advanced by the Benevolent Committee up to, but not beyond, the $10,000 originally budgeted. If the Benevolent Society used just the $8000 estimated, the remaining $2000 or whatever was left unpaid from the annual budget for any given year would be invested in the Benevolent Fund and thus held in reserve for future emergency.

Your committee feels that this proposal will provide a flexible working arrangement and will at the same time permit the development of a permanent fund for the future. For these reasons, it recommends *that this proposal be adopted.*

If this proposal is adopted your committee further recommends that a temporary committee on benevolence be appointed to operate until such time as the by-laws may be amended to authorize a permanent arrangement.

Dwight O'Hara, *Chairman*
Theodore L. Badger
Robert W. Buck
Charles C. Lund
Eliot Hubbard, Jr.

APPENDIX NO. 12

Report of Delegates to House of Delegates of American Medical Association

The House of Delegates met in Chicago June 21 to 24, inclusive. All members of the Massachusetts delegation or their alternates attended. The distinguished service award was given to Dr. Isaac A. Abt, of Chicago, at the first session. The Judicial Council presented a very careful revision of the Code of Ethics that was adopted unanimously. A special committee on the constitution and by-laws, which has been working for two years, presented a revision, which was also adopted after considerable discussion. These actions were time consuming but necessary. Several distinguished guests addressed the House — Admiral Swanson, surgeon general of the Navy, the president of the British Medical Association and General Hawley, co-ordinator of the Blue Cross and Blue Shield plans.

Component societies were urged to appoint their delegates to the House before January 1 so that the Speaker can appoint reference committees at least a month before the meeting of the House. Our society should take cognizance of this rule, since otherwise delegates will not be given reference-committee appointments.

The House voted to change the method of selecting candidates for the distinguished service award for general practitioners. Hereafter each county or district society will be asked to nominate one of its members, if it sees fit, to the state society. The state society will then select one of these nominations to be sent to the American Medical Association headquarters. Three of these will be selected by the Trustees to be voted upon by the House at its interim session.

The House went on record in favor of one year's rotating internship for every graduate of medicine and requested the Council on Medical Education and Hospitals to activate this procedure.

It was also announced that the Council on Medical Education and Hospitals was undertaking a survey and revision of medical education with special reference to the curriculum of medical schools.

Also contemplated is a foundation for the solicitation and distribution of funds to help finance medical schools and medical education.

The Council on National Emergency Medical Services suggested certain basic principles to guide the American Medical Association under the threat of national emergency, which were unanimously adopted. It affirmed that the services of physicians must be carefully conserved and judiciously allocated in time of war to ensure adequate medical, health and sanitary care for all Americans, whether in or out of uniform. It recommended, among other things, a single physical examination of recruits and inductees and deferment of properly selected and duly registered premedical and medical students and essential teachers. The call of medical officers to military duty should be in the following order: those educated at Government expense; those who did not serve in World War II; and those who served least in World War II. State and county societies should use every effort to induce such men to volunteer.

A resolution that received considerable publicity sought to amend the constitution of the American Medical Association so as to prohibit the exclusion of certain classes of physicians from membership in component county societies. It was pointed out that the American Medical Association has never excluded physicians on the basis of race but that the component medical society is the sole judge of whom it elects to membership provided the applicant shall meet the medical requirements for membership.

From testimony presented at several hearings concerning the American Red Cross blood bank it was evident that there has been some confusion and misunderstanding between local chapters of the Red Cross and the medical profession at local levels. The House of Delegates, recognizing the professional ability of the physicians constituting the Advisory Committee of the American Red Cross and the efforts they have made in behalf of this program, as well as the efforts of a similar committee, approved by the House of Delegates of the American Medical Association in January, 1948, felt that this intimate co-operation should be continued but that even greater effort and co-operation would be necessary in the future. It therefore recommended that the Advisory Committee be increased to nine members, with definite instructions to meet at stated intervals, and to report from time to time to the House.

Resolutions pertaining to what is somewhat loosely known as the "practice of medicine by hospitals" have been introduced annually to the House of Delegates for several years. They have dealt largely with the specialties of anesthesiology, radiology and pathology. The House has repeatedly taken the position that these specialties are the practice of medicine and not hospital practice and that these departments should not be used to finance other departments of the hospital. The sore still festers. The House of Delegates has no police power to implement its decisions.

To clarify this troublesome problem the trustees of the American Medical Association appointed a committee of five under the chairmanship of Elmer Hess, of Erie, Pennsylvania. I was asked to serve on this committee. The full committee held many meetings at Chicago and heard representatives of the various specialties. The subject is so broad and has so many ramifications, and practice differs so much in different parts of the country, that the committee could not reach any definite opinion in the time at its disposal. It asked to be continued and that the Bureau of Legal Medicine and Legislation of the American Medical Association be instructed immediately to make a study of the various state laws defining the legal status of corporations attempting to practice medicine in the various states, defining in each instance the difference in the various state laws concerned with the problem. The committee will continue at work and will be glad of any suggestions or comments sent to Dr. Elmer Hess, Erie, Pennsylvania, or to me at 31 Chestnut Street, Salem, Massachusetts.

More resolutions than usual were presented, but all received meticulous hearings in the various reference committees and the reports they rendered to the House were so carefully considered and worded that they were usually adopted without lengthy debate. On the whole one must be impressed with the smoothly running machinery of the House of Delegates under the skillful guidance of the Speaker Dr. Roy Fouts, who is retiring this year after serving several years. He will be succeeded by Dr. Francis F. Borzell, of Philadelphia, who has been the vice-speaker for several terms.

WALTER G. PHIPPEN

APPENDIX NO. 13

REPORT OF THE SUBCOMMITTEE ON MENTAL HEALTH

The Committee on Mental Health met on August 12, 1948, with Drs. Barton, Tadgell and Malamud, and Dr. William C. Inman, invited as a consultant, present.

Your committee recommends that this report be made accessible to the members of the Society in order that they may know how federal funds are being spent in the Commonwealth to procure mental health.

The demands for psychiatric help for children and for adults, both in and out of institutions, far exceeds the capacity of existing agencies to deal with them. Trained personnel is scarce; therefore, it became one of the primary purposes under the federal Mental Health Act to train more skilled workers for work in the field of psychiatry. An amount of $1,430,000 was appropriated for use in this country to train doctors, nurses, social workers, and other members of the psychiatric team. A fund of $100,000 was established, for the entire country, to be used for research fellowships and $470,000 was set up for research. Money for training and research has been allotted by federal committees in Washington to centers of training and research throughout the country on the basis of need and the quality of supervising personnel available. It is to be regretted that Congress made a substantial cut in the amount of money originally set up to do the work.

The need for trained workers in psychiatry is tremendous. The money made available is far below the need and what could be spent to advantage. There are many excellent training centers and research institutions that could have been participating but the lack of funds, which were not appropriated, made it impossible for them to co-operate. There are many excellent men applying for training in psychiatry who cannot follow the long course because of lack of funds.

A total of $3,550,000 was appropriated in the United States for psychiatric community service. This money is allotted directly to states, and federal funds are matched at the rate of $2.00 for $1.00. The share of Massachusetts was $101,200, which is expended under the supervision of the Department of Mental Health.

The following projects have been carried out in the Commonwealth with the money granted:

Assistance to certain overcrowded clinics for the emotional problems of children so that more children were helped and the waiting time for such help was reduced. This resulted in better and earlier community adjustment.

Regular psychiatric advisory service to the three state training schools for delinquent children; two of these schools are for boys, and one for girls. This service is pertinent to the study of aggression and the cause of community rehabilitation of children whose aggressive acts have exceeded the limitations of social acceptance.

Regular psychiatric advisory service to several of the more important and active courts, all of which try substantial numbers of children, as well as adults. This is a humane and economical effort to reduce hospital examinations and to give advisory service to the presiding justices and their probation officers "on the spot" prior to disposition.

Supervisory service to organize and promote more fully the preparation or training program for nurses, licensed attendants and attendants. This is a fundamental need aimed to offer a fair degree of orientation to these groups from all fields of medicine and public health. It is one of the most important considerations. A central film library dealing with psychiatric subjects to assist in teaching has been established in the Department of Mental Health.

During the war, as a matter of necessity, it became important to bring into the mental hospitals certain general practitioners from the community. Their purpose was to do routine physical examinations, blood tests, conduct employee clinics and give inoculations, thereby freeing the scarce resident psychiatric doctors to utilize more fully their own skills to the greater advantage of patients. These physicians became better oriented in psychiatric work, and the community reaped the benefit of this experience. This program has been greatly expanded.

Of particular importance in the long-range program has been the training, on a part-time basis, of general practitioners from the smaller communities. These doctors were assigned in four mental hospitals for training in psychiatry. There was not intention to make specialists of the family physicians but rather to help them meet demands for more information regarding incipient mental illnesses and emotional disturbances.

Assistance was given to teaching hospitals with outpatient work in psychiatry. Grants for personnel and supplies were made for the training of personnel who might later be able to operate such facilities.

Some aid was given also to local psychiatric clinics.

State Hospitals

Our medical colleagues, in particular, and the public in general, should be aware of the plight of the state hospitals. Mental hospitals have suffered severely during recent years from a shortage of trained personnel. This shortage has been made worse by the provision of salaries that will not attract workers to the Commonwealth, since the surrounding states offer higher wages in competition. Hospitals are extremely overcrowded, making management of patients difficult. There is need for new construction. Adequate funds must be appropriated for operation.

Appropriation increases have not realistically adhered to patient-care standards and have not kept pace with the rising costs of things that must be bought.

Doctors and their patients must exert pressure on the Legislature to make adequate provision for the care of the mentally ill, the feeble-minded and the epileptic, in our state hospitals.

Massachusetts Psychiatric Society

It was recommended that the Massachusetts Psychiatric Society (a district society of the American Psychiatric Association) be invited to meet jointly at the annual meeting of the Massachusetts Medical Society and to arrange a program of general interest on a psychiatric topic.

It seems highly desirable that there be less separation among specialty groups with a greater awareness of common medical problems. Instead of suggesting the creation of a new section on nervous and mental diseases that would hold special sessions at the annual meeting, it seems desirable to invite the existing state psychiatric society to convene in joint session and to provide a suitable program from which all would profit as a part of the Massachusetts Medical Society's annual scientific program.

Education of the Public

This committee understands that the Massachusetts Medical Society has sponsored a radio series designed to educate the public on health needs. It would appear advantageous to have some of the programs devoted to the topic of mental health.

WALTER E. BARTON, *Chairman*
WILLIAM MALAMUD
HENRY A. TADGELL

CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

Weekly Clinicopathological Exercises

FOUNDED BY RICHARD C. CABOT

TRACY B. MALLORY, M.D., *Editor*

BENJAMIN CASTLEMAN, M.D., *Associate Editor*

EDITH E. PARRIS, *Assistant Editor*

CASE 34491

PRESENTATION OF CASE

A forty-one-year-old housewife was admitted to the hospital because of multiple fractures.

Six years before entry she began to have attacks of vomiting, which were attributed to gall-bladder disease. She became pregnant and suffered from toxemia but managed to deliver a full-term infant. The baby had convulsions for three weeks after birth. Three years before entry her menses ceased and she had had hot flashes. During the same year a laparotomy was performed, with removal of a chronically inflamed gall bladder containing stones. Soon after operation she began to notice definite malaise, generalized pains, easy fatigability, irritability and attacks of chest pain, dyspnea and palpitation. She was treated by a physician with Lugol's solution without improvement. She then developed swellings of the bones of the lower limbs and some deformity and later had a spontaneous fracture of the right tibia and fibula when getting up from a chair. She was hospitalized for one month. The bones were reported to be soft — "they could not tell the difference between tissues and bones." Finally an exploration of the neck was carried out and a tumor nodule 2.5 cm. in diameter was removed from below the right lobe of the thyroid gland. This was reported as "parathyroid adenoma." She apparently had postoperative tetany, which responded to hytakerol and calcium. She improved considerably, and by the next year she was able to get about, using only a high sole to correct for the shortening of the right leg. However, she never completely regained her strength, and x-ray studies showed cysts forming in the right femur. Six months before entry another neck exploration was done, and the right lobe of the thyroid gland was removed as well as two nodules on the right side. The pathological report was "chronic interstitial thyroiditis." She did not improve, and two months later the neck was again explored, but no parathyroid tumor was found. A biopsy removed from the left side was reported as showing "epithelial hyperplasia of the parathyroid gland." The next week while still in the hospital she fractured the right femur while getting on the bedpan. The following week the mediastinum was explored, with removal of a "parathyroid adenoma showing suspicious epithelial hyperplasia." She was transferred to this hospital by plane. On the way she fractured the left femur while getting on the bedpan.

Over the past three years she had had polyuria, polydipsia and moderate constipation. The fingernails became "much stronger."

Physical examination revealed nodular tender swellings of the ribs anteriorly and flattening of the ribs posteriorly, bony thickening and irregularity of the left iliac crest and a fracture deformity of the left thigh. The right lower limb was in a plaster cast, with Steinmann pins incorporated above and below the fracture of the femur. The tongue and mucous membranes were dry, and both corneas showed abortive but definite band keratopathy and a "fish-egg" appearance to the conjunctiva.

The temperature was 99.2°F., the pulse 110, and the respirations 25. The blood pressure was 110 systolic, 82 diastolic.

The hemoglobin was 11.6 gm., and the white-cell count 8800, with 68 per cent neutrophils. The serum calcium was 15.4 mg., and the phosphorus 3.6 mg. per 100 cc., the potassium 2.6 milliequiv. per liter, and the alkaline phosphatase 20.6 Bodansky units. The serum nonprotein nitrogen was 37 mg. per 100 cc. and the carbon dioxide content was 24.4 milliequiv. per liter. The serum protein, chloride and prothrombin time were normal. A twenty-four-hour specimen of urine contained 359 mg. of calcium. Albuminuria was noted in only one of several urine specimens.

X-ray films of the jaws showed that the lamina dura was missing. There was marked decalcification of all visualized bones of the lower limbs, especially in the shafts of the femurs, with fractures. A plain film of the abdomen showed a staghorn renal calculus on the left side.

An operation was performed on the eighteenth hospital day.

Differential Diagnosis

Dr. Walter Bauer: On the basis of the history and the laboratory findings it appears that this forty-one-year-old woman was suffering from hyperparathyroidism of at least three years' duration. The problem, as I see it, is to determine, if possible, the nature of the hyperparathyroidism. Was it due to hyperplasia of the parathyroid glands? If so, was it the result of chronic renal disease? Surely we have little evidence favoring such an interpretation. Was the hyperparathyroidism due to an excess of the parathyrotropic hormone from a parathyroid adenoma or some other condition? I think this case might be easier to interpret if we knew whether or not calcium, phosphorus and phosphatase determinations were done prior to admission to this hospital and whether or not these values were altered following removal of the "parathyroid tumors." Obviously they were not influenced for long following removal of the mediastinal parathyroid adenoma. One would like very much to know whether this first parathyroid adenoma was removed with ease or whether the surgeon, by any chance, had difficulty in resecting it. One would also like to know whether the two nodules removed from the right side of the neck at the time of the hemithyroidectomy were examined and if, by chance, they showed any evidence of parathyroid tissue. I take it that we do not have any knowledge of the nature of these nodules, nor do we know what was biopsied on the left side of the neck, later reported as showing "hyperplasia of the parathyroid gland."

Dr. Joseph C. Aub: When was the last operation before she came in?

Dr. Bauer: About four months before admission to this hospital. I would like to know whether she had a hypercalcemia, a hypophosphatemia and an increase in the alkaline phosphatase prior to the first operation. If so, did these values return to normal? They would not necessarily have to.

Dr. Benjamin Castleman: At the time of the first operation the serum calcium was 16 mg. per 100 cc. The final levels before she came here ranged from 14 to 16 mg., essentially unchanged by the operative procedures.

Dr. Bauer: The patient continued to have a hypercalcemia from the time she first came under observation?

Dr. Castleman: Yes.

Dr. Bauer: May we see the x-ray films?

Dr. Stanley M. Wyman: The films of the teeth show absence of the lamina dura. All the visualized bones are markedly osteoporotic, and there is some tendency to cyst formation, particularly in the shaft of the right femur. Old fractures of the right lower leg are seen in this view. There are stones in the pelvis and calyxes of the right kidney. The lungs appear clear, and there is no evidence that I can see of a definite mass in the mediastinum or hilar region. It is the picture of marked bone atrophy with cyst formation and fractures.

Dr. Bauer: We can say that the x-ray evidence is consistent with the diagnosis of hyperparathyroidism. From what Dr. Castleman tells us this patient apparently continued to have hypercalcemia despite the removal of the two tumors, both of which were interpreted as "parathyroid adenomas."

On reading this record I was intrigued by these quotations, "epithelial hyperplasia of the parathyroid gland" and "parathyroid adenoma, showing suspicious epithelial hyperplasia." Largely on the basis of these two statements I wondered whether, in this case, we might be dealing with a person who had cancer of the parathyroid gland. I have never seen such a case, and I have only looked up one article, namely, the one presented by Dr. Norris* from this hospital. He reviews the literature and calls attention to 16 cases that he thinks might readily be termed cancer of the parathyroid gland. He then points out some of the difficulties in cases of this type as opposed to a lone adenoma and the cases of hyperparathyroidism due to generalized hyperplasia. In 12 cases the tumor was readily felt in the neck, and in 9 the patient was aware of its presence. It is of further interest that these nodules had been present for some time — in 1 patient as long as thirty-five years, and in others, two, three, five, eight and ten years. In 5 cases the tumor was actually observed to enlarge under observation. I inquired about the ease with which the first "adenoma of the para-

*Norris, E. H. Carcinoma of parathyroid glands. *Internat. Abstr. Surg.* 86:1-21, 1948.

thyroid gland" was removed, thinking that this would be of help to me concerning the presence of cancer of a parathyroid gland. It is apparent that resection of this type of parathyroid tumor is much more difficult because of invasion of the surrounding tissue. All cases had hypercalcemia. One patient was operated on twice, and on each occasion following removal of a "tumor," the serum calcium returned to normal only to become elevated at a later date. In another case the hypercalcemia returned to normal following each of the three operations. Finally, this type of lesion can metastasize or spread locally. The metastases most commonly seen have been in the lungs, although in 1 case the liver and, in another, the bone were involved. This brings up the question whether or not a parathyroid adenoma can become malignant. From the evidence that Dr. Norris has collected it appears that such degeneration can and does take place. Certain precautions should always be taken when one is dealing with a patient of this type. The surgeon should first locate all four glands — occasionally there are more than four — before attempting removal of any tissue. It is important to have present a pathologist who is capable of diagnosing parathyroid lesions. He must tell the surgeon whether he is dealing with a lone adenoma, a hyperplastic gland or cancer of the parathyroid gland. I do not know how difficult it would be to make a diagnosis of carcinoma of the parathyroid gland on a frozen section. It is conceivable that it might be an extremely difficult job, but if any of the gross characteristics are observed, certainly it would behoove the surgeon to do as radical a resection as possible if he hoped to obtain a complete cure, that being of course the only way of curing such a lesion because it does not respond to x-ray therapy. Therefore, largely on the basis of the pathologist's referring to the presence of "epithelial hyperplasia" in two of three specimens revealing parathyroid tissue, I shall make a diagnosis of carcinoma of the parathyroid gland rather than hyperplasia of the parathyroid glands.

DR. OLIVER COPE: We were very much helped in this case by the fact that the blocks of tissue previously resected were sent along with the patient, and Dr. Castleman and Dr. Mallory obtained adequate sections and gave us a diagnosis beforehand.

CLINICAL DIAGNOSIS

Carcinoma of parathyroid gland.

DR. BAUER'S DIAGNOSIS

Carcinoma of parathyroid gland.

ANATOMICAL DIAGNOSIS

Carcinoma of parathyroid gland.

PATHOLOGICAL DISCUSSION

DR. TRACY B. MALLORY: We thought that this was a definite carcinoma of the parathyroid gland. It was growing with sufficient rapidity to have mitotic figures, which are unusual in adenoma, and in the second specimen, although not in the first, there was definite invasion.

DR. COPE: The initial problem presented by this patient was whether she had hyperparathyroidism or a carcinoma elsewhere with metastases invading the entire skeleton. Rapidly spreading bone metastases may mimic hyperparathyroidism from the chemical point of view; in such patients the serum calcium is elevated, and there is an excessive excretion of calcium in the urine. These findings were present in this patient, and the serum phosphorus level was normal. This last can exist in hyperparathyroidism if there is impairment of renal function. Because of the presence of carcinoma in the parathyroid adenoma already removed, hyperparathyroidism was the diagnosis, and it seemed right to attempt a radical excision of the parathyroid tissue. The operation was divided into three stages. The left side of the neck was exposed at the first stage because that was the side opposite where the large tumor had been found, and it was important, if possible, to save the normal parathyroid tissue before doing a radical excision and attempting to excise all the hyperfunctioning carcinomatous tissue. A cluster of carcinomatous lymph nodes was found just above the upper end of the thoracic duct on the left — a common finding from carcinoma on the right side of the neck spreading in the lymphatics. The second operation was the exploration of the right side; it was disappointing. Only one large lymph node, swollen with carcinoma, was found. No other parathyroid tissue was encountered. We hoped that enough tissue — metastases in lymph nodes — could be found in the mediastinum to account for the continued hyperactivity. The third operation was, therefore, a mediastinal exploration, but only one small carcinomatous lymph node could I find. Removal of this small amount of carcinomatous tissue did not alter the function as judged by the absence of changes in the blood levels of calcium and phosphorus. The only assumption left to us, since there was no evidence of metastases in the lungs, was that somewhere in the bones or in the liver there must be carcinomatous tissue. That is a presumption. Dr. Lerman and Dr. Koch have been trying to inactivate the patient's parathyroid hormone by sensitizing her to the crude parathyroid extract. So far they have not been able to demonstrate inactivation. She has returned to the city from which she came, with incurable disease as far as our present abilities go.

CASE 34492

Presentation of Case

A fifty-four-year-old man was admitted to the hospital because of crampy abdominal pain and diarrhea.

He had been well all his life until three years preceding admission, when he went to another hospital because of crampy pains in the lower abdomen and diarrhea without gross blood in the stool. A barium meal was said to demonstrate a duodenal ulcer, and on a dietary regime the symptoms disappeared entirely. Four weeks before entry to this hospital the same type of pain, again associated with three or four loose stools daily, returned. This time he was unable to obtain relief by changing his diet. The original episode had been accompanied by a 36-pound weight loss, which he subsequently regained, and the current attack with a 10-pound weight loss.

The family and past histories were irrelevant. The system review revealed nocturia of three or four times for the past six years without other genitourinary complaint.

Physical examination revealed a well developed, well nourished man who did not appear to be ill. The heart and lungs were normal. On deep inspiration the liver was felt two fingerbreadths below the costal margin. The prostate was enlarged to one and a half times the normal size and was smooth and symmetrical.

A urinalysis was negative. The white-cell count was 8000, and the hemoglobin was 15.5 gm. (photoelectric-cell technic). Two x-ray examinations of the colon demonstrated a large, polypoid mass, measuring slightly more than 4 cm. in diameter, in the transverse colon (Fig. 1). A colocolic intussusception, 10.1 to 12.7 cm. in length, was observed, the tumor initially being in the transverse colon near the hepatic flexure, but partial reduction occurred during filling so that it took a final position near the splenic flexure. Two other rounded defects in the colon near the hepatic flexure were seen on one examination, measuring 1 and 2 cm. in diameter, respectively. There was a questionable, small, polyp-like defect in the sigmoid region.

On the fourth hospital day an operation was performed.

Differential Diagnosis

Dr. Claude E. Welch: Let us see the x-ray films before starting the discussion.

Dr. Stanley M. Wyman: I think you can all see the large, somewhat lobular, but relatively smooth mass lying in the lumen of the bowel with a sleeve of intussusception running around it. Also, there is an increase in the number of folds over the region of the tumor, which is evidence of intussusception. The fluoroscopist noted that in the beginning the mass lay in the general region of the splenic flexure, and as the barium column progressed it forced the mass proximally and, I think, in effect reduced the intussusception rather than caused it. There is no definite pattern of mucosal destruction that one can see in any of the films. All one can say is that there is a round, somewhat lobular, rather smooth, intraluminal mass, which has caused intussusception of the colon and during the examination was partially reduced. The small, questionable areas described in the protocol lie in the sigmoid. In view of the obviously poor condition of the bowel as far as preparation is concerned, these areas cannot be taken too seriously.

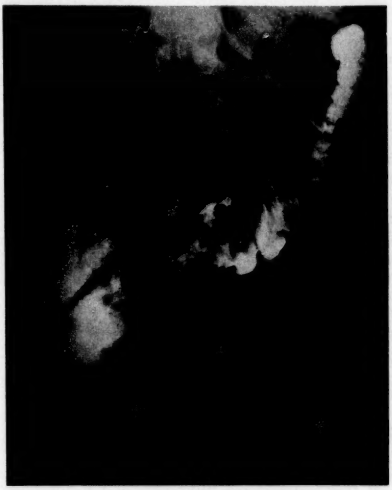

Figure 1.

Dr. Welch: Dr. Wyman's report and description of the x-ray film here are going to force me to change my original diagnosis as I will point out later.

It is fair to state that the first attack of pain three years before entry was not due to duodenal ulcer but was caused by the same type of disease for which the patient was admitted. This long interval suggests a benign rather than a malignant lesion. The loss of weight with subsequent complete recovery is also very suggestive of that diagnosis. There is nothing else remarkable in the history or physical findings.

About ten years ago I looked up the intussuscepting lesions of the large bowel in this hospital, stimulated by a patient of Dr. Arthur W. Allen who entered with carcinoma extruding from the anus. At operation the tumor was found to arise from

the midsigmoid. Dr. Allen did a resection and an easy anastomosis. During a ten-year period I was able to find records of 18 intussuscepting lesions of the colon. In this group the final diagnosis was carcinoma in 13 cases, lipoma in 3, benign polyp in 1 and hemangioendothelioma in 1. Two thirds of the cases, therefore, were cancer, and the remainder of the patients had intussusception because of benign tumors.

The description of the x-ray films in the protocol at first suggested to me that the patient had benign polyps at the outset and that the polyp in the transverse colon had, after three years, developed into low-grade carcinoma. I think that is less likely now because the bowel was poorly prepared, and the suggestive polyps mentioned in the protocol are much more typical of fecal matter on the x-ray films that Dr. Wyman has shown us. The surface of the mass is also quite smooth in the x-ray film. In other words, I now do not believe we are dealing with carcinoma, and the absence of other findings in the bowel inclines me definitely toward the diagnosis of lipoma since it is the most common simple benign tumor that produces intussusception in the colon.

I might state also that there are no other diagnostic features that would give help unless proctoscopy was done and polyps demonstrated. So far as stool examinations are concerned, intussusception will lead to strongly positive guaiac reactions in both benign and malignant tumors.

I will rest on the diagnosis of lipoma as the intussuscepting tumor in the transverse colon.

Dr. Roy E. Mabrey: This is a patient of mine who had received x-ray study at another hospital three years before admission, when the diagnosis of duodenal ulcer was made. A barium enema was not done at that time. When I saw him he complained of low abdominal pain, crampy diarrhea and weight loss. Sigmoidoscopy was done, and nothing found to suggest polyposis. I then asked for a barium enema, which revealed the findings discussed above.

I explored him, and at the time of operation I found a mass in the transverse colon. The transverse colon was redundant so that there was wide mobility of the tumor mass. On the serosal surface there were three or four grayish plaques, which I believed were carcinoma invading the serosa, and I went ahead and did a wide resection of the transverse colon with end-to-end anastomosis.

Clinical Diagnosis

Carcinoma of transverse colon.

Dr. Welch's Diagnosis

Lipoma of transverse colon, with intussusception.

Anatomical Diagnosis

Submucous lipoma of transverse colon, with previous intussusception.

Pathological Discussion

Dr. Benjamin Castleman: The resected specimen was unusual in that the tumor, a benign lipoma, did not seem to be as big as the x-ray shadow suggests. I suppose a large part of the x-ray shadow is due to the intussusception, which was not present when we received the specimens. The tumor itself was less than 3 cm. in diameter and was only slightly elevated above the surrounding mucosa, most of the tumor being located in the submucosa. The central third of the mucosa over the tumor was ulcerated, disclosing grayish-yellow fat. This ulceration was almost certainly due to repeated attacks of intussusception that were occurring time and time again, causing gangrene of the mucosa.

Had he had any blood in the stools as far as you know?

Dr. Mabrey: No.

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THE MASSACHUSETTS MEDICAL BENEVOLENT SOCIETY

THE Massachusetts Medical Benevolent Society, the oldest of its kind in continuous existence in the United States, was first organized at a meeting of physicians held in Boston on March 19, 1857. Its formal Article of Association reads: "Whereas it sometimes happens that worthy members of the medical profession become reduced in circumstances, we, whose names are underwritten (all being residents of Massachusetts), do hereby associate ourselves as a body corporate for the relief of such, or of their families, should they need assistance." After fourteen years of activity as a voluntary association it was legally incorporated on May 8, 1871, and has continued active to the present day. Funds are raised and invested, annual dues are levied upon the members, and the sum thus accumulated, increased from time to time by gifts and legacies, has been held in trust. For ninety years the Society has annually devoted its entire income to the charitable relief of unfortunate physicians and their widows or minor children, whom circumstances have made dependent upon the pecuniary aid of others. Such has been the quiet but constant beneficence of this peculiarly characteristic medical organization.

With the growth in numbers of physicians in the Commonwealth, however, the legitimate needs of assistance have outrun the ability of the Benevolent Society to meet them. For some time, the individual members and groups within the Massachusetts Medical Society have endeavored to fill some of these needs by their own charitable activities. Obviously it is desirable that such assistance to physicians should be under a single administration, combining and correlating the work of both organizations. To this end, an arrangement has recently been formulated and adopted whereby financial relief to deserving, destitute physicians in the Commonwealth shall be administered by a "Board composed of representatives of the Massachusetts Medical Society and of the Massachusetts Medical Benevolent Society." Each society retains its separate identity, but the funds of both, available for needed assistance to indigent physicians, are to be allocated and disbursed under a joint management. This seems to be an eminently just and desirable arrangement, which should meet with general approval.

It has always been an established point of honor in the profession of medicine that its members and their families should freely receive professional service in sickness. It should be felt as an equally honorable duty among physicians to see that none of their professional brethren, in old age or adversity, suffer from destitution or personal hardship.

LOCAL HEALTH UNITS

ELSEWHERE in this issue of the *Journal* Archibald and his associates point out some critical deficiencies in the distribution of health services in Massachu-

setts. To those long accustomed to regarding the Commonwealth as a leading state in point of health facilities, it is somewhat of a shock to be informed that there is no complete, statewide coverage by local health units properly governed, financed and staffed to render basic health services to all citizens. The authors present a precise enumeration of existing facilities and no less carefully define the shortcomings in quality and distribution. The most important step in the solution of the problem is stated to be enlightenment of the public concerning the need for new laws and increased facilities to keep Massachusetts abreast of progress in public health; the small communities, which cannot afford these facilities and are unwilling to relinquish autonomy to the extent of forming co-operative units to meet their joint requirements, present a particularly difficult problem. Adequately trained physicians, nurses, sanitarians and accessory personnel, in sufficient numbers to conduct a modern full-time, health organization, must be provided. And, finally, the legislature must be persuaded to appropriate sufficient funds to enable local health departments to do a creditable job.

That Massachusetts is not the only state that has failed to furnish basic health services to all citizens was revealed as long ago as September, 1947, when the National Conference on Local Health units presented a study of public-health conditions throughout the country. The six vital functions, defined at the conference and applied by Archibald et al. to Massachusetts in particular, are as follows: vital statistics; control of communicable disease; environmental sanitation; public-health laboratory services; maternity, infant and child health services; and health education so far as it is not covered in schools and colleges.[1] The National Health Council has also offered suggestions for improving and extending health services at the community level: joint co-operation of official and voluntary health agencies, professional societies, consumer groups and members at large to publicize existing inadequacies and promote efforts at correction.[2]

What may be considered the raw materials necessary for effective action are thus at hand. It remains for those most interested to exert every effort to attain adequate distribution of health services. In view of the ever-present threat of governmental interference in the free practice of medicine, there is an ominous overtone to the statement of Archibald and his co-workers: "Until such local health units become a reality, a sound public-health program cannot be administered in an efficient, economic and competent manner." The medical and public-health professions should exert every effort to achieve the goal envisaged. Massachusetts, the cradle of many liberties, can do much to continue the free status of public-health practice: every effort to overcome the present shortcomings in health services helps to hold off the heavy, blighting hand of political pressure and dictation.

REFERENCES

1. *Proceedings of the National Conference on Local Health Units.* 95 pp. New York: American Public Health Association, 1947. P. 5.
2. Lyon, Y. *Stepping Stones to a Health Council.* 28 pp. New York: National Health Council, 1947.

CURE GUARANTEED OR MONEY BACK

A DRUG manufacturing firm, nationally known, has this fall suddenly released a barrage of newspaper advertising that leaves no possible doubt as to its ethical standards in this instance. Among reputable pharmaceutical manufacturers direct advertising to the public simply is not done. So far as the acceptance of full-page weight-reduction advertisements with notarized testimonial letters is concerned, it can only be said that each newspaper will adhere to its own standards.

In this day and generation and in what might be considered good journalistic society, the flamboyant advertising direct to the public of drugs of any sort is bad taste. When the advertising matter contains testimonial letters, before-and-after-treatment photographs, money-back guarantees and certification as to safety by noted physicians (names not given), the total result is another disheartening blow to those who have worked diligently in the interests of health, the protection of the public, and the better distribution of good medical care.

The advertisement in question makes certain concessions to modern ethical considerations, showing, at least, that the advertiser is aware of

their existence. The statements are made, for instance, that the advertised product is not for glandular obesity, and that endorsement by the purchaser's physician is recommended. If the advertisers had not shown this awareness of current medical ethics, their lapse might be more readily understood.

The medical profession, as is to be expected, incurs the suspicion of self-interest when it criticizes the practice of medicine by others than its own members. Let it be admitted that an element of honest professional self-protection exists. Let it also be recognized that the physician in treating a patient assumes a responsibility that no manufacturing druggist is capable of assuming.

He assumes, in particular, the responsibility of determining to the best of his ability that the advice he offers is suited to the needs of the individual patient. He attempts, when permitted to practice his profession according to its accepted precepts, to make as accurate a diagnosis as possible before prescribing treatment. This cannot be done under the system of self-medication recommended in the advertisement under discussion and sanctioned by the newspapers that accept it.

NEW ENGLAND HEART ASSOCIATION PENICILLIN FUND

SUBACUTE bacterial endocarditis, a complication of cardiovascular disease that has been hitherto almost universally fatal, represents another conquest of the penicillin era. In this disease particularly of the young, the mortality rate has been changed by adequate treatment with penicillin from practically 100 per cent to the vicinity of only 25 per cent.

Adequate treatment, however, consists of an enormous amount of penicillin — approximately a million units a day for a period of thirty days — a most expensive therapeutic procedure and quite beyond the resources of many patients. In this contingency and in order that no patient in New England may be deprived of suitable treatment, the New England Heart Association has set aside a special portion of the fund donated by the public last year, to provide free penicillin for those patients with subacute bacterial endocarditis who cannot otherwise procure it.

This fund is under the supervision of a special committee that has issued recommendations and established criteria as follows:

The diagnosis of subacute bacterial endocarditis is to be established by at least two positive blood cultures, although the committee may approve a request, under exceptional circumstances, when the clinical data seem adequate even with sterile blood cultures.

The treatment shall consist of a million units per twenty-four hours, in divided intramuscular doses every three hours, by continuous intramuscular drip or by slow continuous intravenous infusion unless modifications seem advisable under exceptional circumstances.

Application forms for free penicillin under the terms of this offer have been sent to all New England hospitals and are in the hands of each member of the Heart Association.

The funds for the program are limited, but, in the words of the announcement, "within its resources this association is determined that no victim of bacterial endocarditis in New England shall succumb because of a lack of adequate treatment with penicillin."

BOOK REVIEW

Hodgkin's Disease and Allied Disorders. By Henry Jackson, Jr., and Frederic Parker, Jr. Oxford Medical Publications. 4°, cloth, 177 pp., with 15 plates. New York: Oxford University Press, 1947. $6.50.

This monograph admirably summarizes existing knowledge of a group of conditions of increasing clinical importance. The authors discuss Hodgkin's disease, reticulum-cell sarcoma, lymphocytoma and lymphoblastoma, lymphosarcoma, giant-follicle lymphoma and plasmocytoma; they advise discarding the term "endothelioma" as used by some for a member of this group.

All phases of each group, including excellent clinical descriptions, are presented. There are numerous well reproduced illustrations, particularly valuable as giving a clear idea of a varying pathological histology. Since, as the authors point out, prognosis in each patient depends very largely upon histologic appearances, biopsy study of these patients is of very great clinical import as a probable index of duration of life; some of the patients, particularly those with the histologic characteristics of Hodgkin's paragranuloma or of giant-follicle lymphosarcoma, will live a long time in reasonable comfort, whereas others will die in a short time whatever the treatment. Incidentally, treatment for each group is thoroughly and well described.

Jackson and Parker face the often discussed problem whether Hodgkin's disease is or is not to be regarded as a neoplasm by subdividing the cases into three types: Hodgkin's paragranuloma, Hodgkin's granuloma and Hodgkin's sarcoma. In their own words "paragranuloma bears little or no resemblance to a true tumor"; regarding granuloma type "the fact that the Reed–Sternberg cells are frequently scattered, isolated and often separated widely by cells of other types favors an inflammatory process rather than a neoplasm," whereas "on the clinical side . . . [many features] are all more characteristic of an infectious process than of a tumor"; they state that "Hodgkin's sarcoma has all the characteristics of a true neoplasm." However, they

admit that in time one type of Hodgkin's disease can change to another.

The "allied disorders" included by Jackson and Parker are considered to be neoplasms either malignant or potentially malignant. Of these giant-follicle lymphoma long may behave as a benign neoplasm.

This monograph, written by a clinician and a pathologist long interested in these conditions, will prove useful to both pathologists and clinicians. The reviewer commends it to both groups of potential readers as a source of valuable information.

NOTICES

NEW ENGLAND DIABETES ASSOCIATION

A joint meeting of the New England Diabetes Association with the Middlesex South, Middlesex North, Norfolk, Norfolk South and Suffolk district medical societies will be held in Sanders Theater, Cambridge, on Monday, December 6, at 8:00 p.m.

PROGRAM

Introductory remarks by the chairman, Dr. W. Richard Ohler.

The Purpose of Diabetes Week. Dr. Howard F. Root, chairman of the Diabetes Detection Committee, American Diabetes Association.

Important Physiologic Facts. Dr. DeWitt Stettin, Jr., of the Public Health Research Institute, New York.

Clinical Management of Diabetes (each speaker will talk for ten minutes):

- Diagnosis of Diabetes. Dr. Joseph W. Rosenthal, Norfolk District.
- General Management of Diabetes. Dr. David Hurwitz, Norfolk District.
- Management of Diabetes during Acute Illnesses and Surgical Operations. Dr. James H. Townsend, Middlesex South District.
- Treatment of Diabetic Acidosis. Dr. Reed Harwood, Norfolk District.
- Peripheral Vascular Disease. Dr. E. Everett O'Neil, Norfolk District.
- Crippling Complications of Diabetes. Dr. Howard F. Root, Suffolk District.

All the speakers will answer questions submitted either in writing beforehand or from the floor, followed by an address on the subject "After Fifty Years" by Dr. Elliott P. Joslin, Suffolk District.

Membership in the New England Diabetes Association is open to any physician in New England. Application may be made to the Secretary, 330 Mt. Auburn Street, Cambridge.

JOSEPH H. PRATT DIAGNOSTIC HOSPITAL

30 Bennet Street, Boston
Lecture Hall, 9–10 a.m.

MEDICAL CONFERENCE PROGRAM

Friday, December 3 — Congenital Neurologic Cases. Drs. Clarence W. Houghton and Nils E. Svibergson.

Wednesday, December 8 — Pediatric Clinicopathological Conference. Drs. James M. Baty and H. E. MacMahon.

Friday, December 10 — To be announced.

Tuesday, December 14 — The Relation of Opacities of the Lens to General Medicine. Dr. Josef Igersheimer.

Friday, December 17 — Albumin in the Treatment of Hypoproteinemia. Dr. Sam T. Gibson.

Tuesday, December 21 — *Journal* review.

Friday, December 24 — Craniopharyngioma, Ophthalmic Type, due to Pituitary Tumors (Demonstration and Discussion of Cases Operated on by Transsphenoidal Methods). Dr. Oscar Hirsch.

On Tuesday morning, December 7, from 9 to 10 o'clock and on Wednesday mornings, December 1, 15 and 22, from 9 to 10 o'clock, Dr. S. J. Thannhauser will give medical clinics on hospital cases. On Thursday mornings from 9 to 10 o'clock clinics will be given by Dr. William Dameshek. On Friday, December 10, a therapeutic conference will be held with round-table discussion from 2 to 4 o'clock (Dr. Robert P. McCombs, moderator). On Friday, December 10, Dr. Merrill Sosman will conduct an x-ray conference from 4 to 6 o'clock. On Saturday mornings from 9 to 10 o'clock surgical clinics will be given by Dr. C. Stuart Welch. Medical Rounds are conducted each weekday except Saturday by members of the hospital staff from 12 to 1.

All conferences will be discontinued from December 24, 1948, through January 3, 1949.

All exercises are open to the medical profession.

HARVARD MEDICAL SOCIETY AND BOSTON CITY HOSPITAL HOUSE OFFICERS' ASSOCIATION

A meeting of the Harvard Medical Society and Boston City Hospital House Officers' Association will be held in the Dowling Amphitheater of the Boston City Hospital on Tuesday, December 14, at 8 p.m.

PROGRAM

Case Report: Chronic Renal Acidosis with Osteomalacia. Dr. Beverly T. Towery.

Observations on Aureomycin. Drs. Harvey S. Collins, E. Buist Wells and Maxwell Finland.

Nontuberculous Spinal Epidural Infections. Dr. A. Price Heusner.

Clinical Physiology of Vitamin B_{12}. Dr. William B. Castle (based on work done in collaboration with Dr. Lionel Berk).

Subsequent meetings will be held on January 11, February 8, March 8, April 12 and May 10, 1949.

NATIONAL GASTROENTEROLOGICAL ASSOCIATION 1949 AWARD CONTEST

The National Gastroenterological Association announces an annual cash prize award contest for 1949. One hundred dollars and a certificate of merit will be given for the best unpublished contribution on Gastroenterology or allied subjects. Certificates will also be awarded physicians whose contributions are deemed worthy.

Contestants residing in the United States must be members of the American Medical Association. Those residing in foreign countries must be members of a similar organization in their own country. The winning contribution will be selected by a board of impartial judges, and the award is to be made at the annual convention banquet of the Association in October, 1949.

Certificates awarded to other physicians will be mailed to them. The decision of the judges will be final. The Association reserves the exclusive right of publishing the winning contribution, and those receiving certificates of merit, in its official publication, *The Review of Gastroenterology*.

All entries should be limited to 5000 words and should be typewritten in English, prepared in manuscript form and submitted in five copies accompanied by an entry letter; they should be received not later than April 1, 1949. Entries should be addressed to the National Gastroenterological Association, 1819 Broadway, New York 23, N. Y.

APPOINTMENTS IN VETERANS ADMINISTRATION TUBERCULOSIS HOSPITALS

One hundred full-time doctors are needed by the Veterans Administration for duty in its tuberculosis hospitals.

Applicants should address their inquiries to the Chief Medical Director, Veterans Administration, Washington 25, D. C.

The openings are scattered throughout the nation among Veterans Administration hospitals specializing in the treatment of tuberculous veterans and in Veterans Administration general medical and surgical hospitals operating tuberculosis departments.

The salary scale for full-time doctors in the Department of Medicine and Surgery ranges between $4479 and $10,305 annually for jobs now open.

During the past year, 18,222 tuberculous veterans were admitted to Veterans Administration hospitals for treatment. Discharges during the same period totaled 18,701.

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